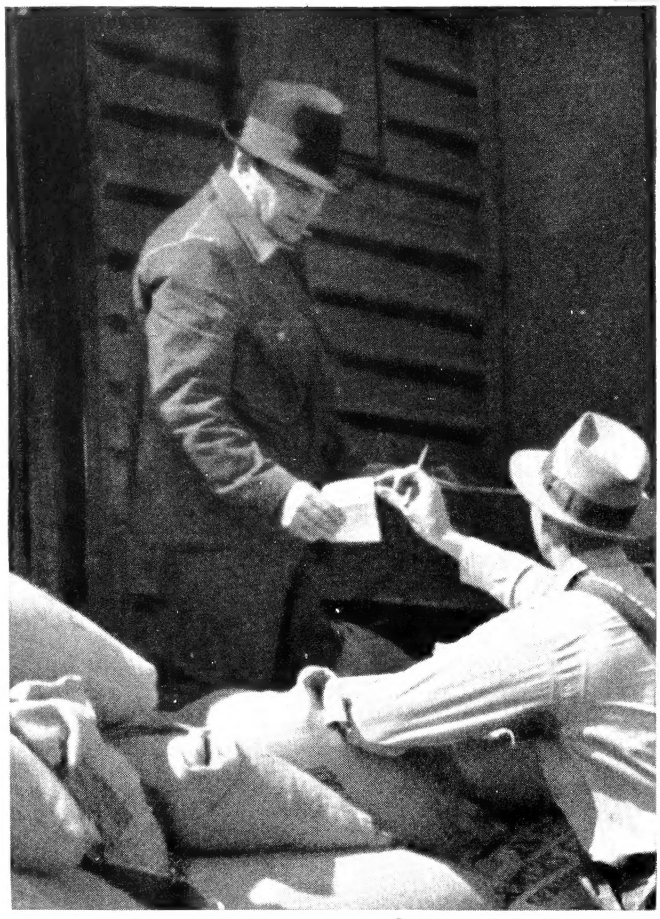
1945 SEED CATALOG ISSUE

EASTERN STATES Cooperator

JANUARY, 1945



TAKE NITROGEN

Whenever You Can Get It

Plan your needs ahead to take advantage of Eastern States chemical nitrogen materials this spring. Select your needs from the following, each of which will furnish readily available nitrogen:

AMMONIUM NITRATE (granular)
NITRATE OF SODA (granular)
URAMON (pulverized)

Plan your needs ahead! Take delivery when you have the opportunity. National supplies are limited by military ordnance demands.

The material you prefer may not be immediately available. You will be more certain of having NITROGEN when you need it by taking deliveries whenever available, rather than waiting for possible later deliveries of the material of your first choice.

EASTERN STATES COOPERATIVE

NITROGEN USES

VEGETABLE SIDE-DRESSING
PLOWING DOWN
HOME MIXING
ORCHARDS
SOD TOPDRESSING

Help s–t–r–e–t–c–h the nation's supply of fertilizer nitrogen by conserving manure. Use ***Eastern States 20% Superphosphate*** in stables and on dropping boards. Spread manure at lighter rates over more of your farm.

COOPERATIVE EASTERN STATES FERTILIZER SERVICE

VEGETABLE SEED ORDER

to

EASTERN STATES FARMERS' EXCHANGE

WEST SPRINGFIELD, MASSACHUSETTS

V _____

SEND PAYMENT WITH ORDER TO AVOID C.O.D. CHARGES

Date of Order _____

Name _____
(PLEASE PRINT)

RFD or Street _____

Post-Office _____ State _____

Express or
Freight Office _____ State _____

Note: On "Add-to-Draft" orders only! Representative sign below if he approves "Add-to-Draft" terms:

Representative's Signature _____

Order only varieties and sizes as listed in catalogue.

THIS FORM MUST BE RETURNED WITH YOUR LETTER IF YOU WRITE ABOUT THIS ORDER.

This order form will be returned to you when your order is shipped. If you have occasion to write about this order, you must return this form with your letter.

This order is given and accepted in accordance with conditions printed on the back hereof.

Column 1					Column 2				
Quantity	Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value	Quantity	Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value
	ASPARAGUS SEED				Brought forward from Column 1				
	BEAN					CARROT			
						CELERY			
						CHARD			
						CORN - SWEET			
	BEET								
	BROCCOLI								
	CABBAGE								
						CUCUMBER			
	CAULIFLOWER								
	Total of Column 1					Total of Columns 1 and 2			

Form 1329

Additional items on the other side

Quantity	Column 3 Indicate Variety Desired When More than One is listed in the Catalogue	✓	Unit Price	Value
Brought forward from Column 2				
	EGGPLANT			
	ENDIVE			
	KALE			
	LETTUCE			
	MUSKMELON			
	WATERMELON			
	ONION			
	PARSLEY			
	PARSNIP			
	PEA			
Total of Columns 1, 2 and 3				

Quantity	Column 4 Indicate Variety Desired When More than One is listed in the Catalogue	✓	Unit Price	Value
Brought forward from Column 3				
	PEPPER			
	PUMPKIN			
	RADISH			
	RUTABAGA			
	SPINACH			
	SQUASH			
	TOMATO			
	TURNIP			
Total of entire order				

CONDITIONS.

This order is subject to acceptance by the West Springfield office of the Eastern States Farmers' Exchange and after such acceptance is further subject to cancellation or prorationing by the Exchange in event of seed crop failures, strikes, fires, embargoes or other contingencies beyond the control of the Exchange. It is further subject to change by the buyer in event of necessary change in his cropping plans upon presentation of satisfactory explanation in writing to the Exchange office in West Springfield and if desired kinds are available.

The member agrees that shipment will be made and accepted under the following condition:

The Eastern States Farmers' Exchange has exercised all reasonable care and precautions in the production, preparation and distribution of this seed, but cannot be responsible for the operation of Nature's laws, nor control the conditions under which it is later stored, handled, planted or grown; so therefore gives no warranty express or implied concerning the description, quality, productiveness or condition of the resulting crop and shall in no case be liable for an amount greater than the amount actually paid for the seed. Statements of germination, description and other information are given as a report of our tests, observations and advice.

Orders cannot be accepted or filled on any other terms.

Send payment with order and avoid C.O.D. Charges

ASSEMBLED BY_____

CHECKED BY_____

DATE SHIPPED_____

THIS ORIGINAL ORDER WILL BE RETURNED TO YOU.

EASTERN STATES Cooperator

VOLUME 21 NUMBER 1

JANUARY 1945

The ***Eastern States Cooperator*** is published at Concord, New Hampshire, the first of each month by the Eastern States Farmers' Exchange. Editorial offices are at 95 Elm Street, West Springfield, Massachusetts. The Exchange is a cooperative purchasing association incorporated under the laws of Massachusetts. It has no dues or membership fees; any farmer making a purchase through the organization automatically becomes a member. The subscribers to the ***Eastern States Cooperator*** are chiefly the members of the Exchange — the magazine being a part of the services of the organization in which they participate cooperatively. Others wanting this magazine, but not receiving it in connection with the Exchange's business, may receive it at a subscription of $1 a year.

Address: EASTERN STATES COOPERATOR
West Springfield, Massachusetts

The Cover . . .

THROUGH constant, conscientious, intensive research Eastern States has created a vegetable seed program unexcelled in quality or for value-in-use. Basic in this complete plan of investigation is the Plant Industry Project — headquarters of Exchange vegetable seed research at Feeding Hills, Massachusetts. Here, old strains are improved — new kinds created — and every lot of seeds thoroughly tested.

The January Cover presents Miss Jean Krofsky checking at firsthand some of the results of Exchange research at Feeding Hills. Miss Krofsky, a graduate of American International College, is the daughter of Member W. J. Krofsky of West Springfield.

Reminders . . .

SPRAYS — DUSTS: Have you placed an order for the *Eastern States Spray and Dust Materials* you will be needing next spring and summer? . . . . . ☐

CALF TABLETS: Baby calves thrive on the extra vitamins A, D, C and niacin which *Eastern States Calf Tablets* provide for first 10 days . . . . . ☐

EARLY ORDERS: There are many advantages to you in the Eastern States early order program. Talk it over with your representative or warehouse manager . . . . ☐

ROOFING: It's not too early to place an order for the *Eastern States Roofing* you will need in the spring. Eastern States selections are for quality . . . . . ☐

Suggestion . . .

MANY people think farmers are in for some tough sledding in the coming years — that competition will be keen and prices low. Northeastern farmers will be wise to make their own land produce more so that they will need to buy less in supplies. We would include better vegetable gardens to cut food costs and excellent hayfields, pastures and poultry ranges to lower the purchased feed bill. These are places where fertilizer and management go hand in hand.

VEGETABLE PLANTING GUIDE

For Direct Field Seeding

Kind of Vegetable	*Seeds Per Oz.*	*Seeds Per Pkt.*	*Seed Needed For 100 ft.*	*Seed Needed Per Acre*	*Packet Will Grow*	*Field Planting Date*	*Inches Between Rows*	*Inches Between Plants*	*Inches Deep to Plant Seed*
Asparagus Seed	1250	½ oz.	½ oz.	5 lbs.	100′	4/1–5/15	20–24	4	1
Beans — Bush Snap	60–75	4 oz.	8 oz.	60–80 lbs.	50′	5/1 –7/15	30–36	3–4	1
Beans — Pole Snap	60–75	4 oz.	4 oz.	15–20 lbs.	75′	5/15–7/1	48	48 H.	1–1½
Beans — Bush Lima	30	6 oz.	1 lb.	100 lbs.	50′	5/15–6/15	36–40	4	1–1½
Beans — Pole Lima	30	6 oz.	8 oz.	50 lbs.	70′	5/15–6/1	48	48 H.	1–1½
Beans — Bush Shell and Soy	50–75	4 oz.	8 oz.	60–90 lbs.	40′	5/15–6/1	30–36	3–4	1–1½
Beets	1500	½ oz.	1 oz.	10 lbs.	25′	4/15–8/1	12–18	2–3	½
Chinese Cabbage	8000	¼ oz.	⅛ oz.	4 oz.	150′	7/1 –8/1	24	15	½
Carrot	27000	¼ oz.	¼ oz.	2–3 lbs.	100′	4/15–8/1	12–15	2	¼
Chard	1100	¼ oz.	½ oz.	4–5 lbs.	50′	5/1 –6/1	24	6	½
Corn — Sweet	125	3 oz.	2 oz.	12–15 lbs.	150′	5/1 –6/20	30–36	10–14	1
Cucumber	1000	¼ oz.	½ oz.	2–3 lbs.	50 H.	5/15–6/15	60	48 H.	1½
Endive	15000	¼ oz.	¼ oz.	2–3 lbs.	100′	4/15–8/1	18–24	12	½
Kale	7500	¼ oz.	¼ oz.	2–3 lbs.	100′	7/15–8/1	18–24	18	½
Lettuce — Leaf	16000	¼ oz.	¼ oz.	2–3 lbs.	100′	4/10–7/15	12–15	8–10	¼
Lettuce — Head	16000	⅛ oz.	¼ oz.	1–2 lbs.	50′	4/10–5/1	15–18	12–15	¼
Muskmelon	1000	¼ oz.	½ oz.	2–3 lbs.	50 H.	5/15–6/15	60–70	60–70 H.	1
Watermelon	200	¼ oz.	½ oz.	2–3 lbs.	10 H.	5/15–6/1	96	60–70 H.	1
Onion	12000	⅛ oz.	½ oz.	4–5 lbs.	100′	4/10–5/1	18–24	3–4	½
Parsley	17000	¼ oz.	½ oz.	3–4 lbs.	50′	4/10–9/1	12–15	8–10	¼
Parsnip	5600	¼ oz.	½ oz.	4–5 lbs.	50′	4/10–5/1	15–18	4–6	½
Pea	90	8 oz.	1 lb.	90–150 lbs.	50′	4/1 –5/1	30–40	2–3	1
Pumpkin	100	½ oz.	½ oz.	4 lbs.	10 H.	5/15–6/1	96	60–70 H.	1
Radish	3500	¼ oz.	1 oz.	12 lbs.	25′	4/1 –9/1	12	1	½
Rutabaga	10000	⅛ oz.	¼ oz	2 lbs.	50′	6/15–7/10	18–24	6–8	½
Salsify	4500	¼ oz.	½ oz.	7–8 lbs.	50′	4/15–5/15	18–24	3	½
Spinach	3000	1 oz.	1 oz.	8–12 lbs.	100′	4/1 –9/15	14–18	2–4	½
Spinach — New Zealand	350	¼ oz.	½ oz.	3 lbs.	60′	5/1 –6/1	48	36	1
Squash — Summer	300	¼ oz.	½ oz.	3–4 lbs.	15 H.	5/15–6/15	48	36 H.	1
Squash — Winter	125	¼ oz.	1 oz.	4 lbs.	6 H.	5/25–6/10	96	60–70 H.	1
Tomato	7500	⅛ oz.	1/20 oz.	4 oz.	200′	5/15–6/1	36–48	24–36	½
Turnip	10000	½ oz.	½ oz.	2–4 lbs.	100′	4/1 –8/1	12–18	4–6	½

H — Hills

For Transplanting

Kind of Vegetable	*Seeds Per Oz.*	*Seeds Per Pkt.*	*Plants from 1 Oz.*	*Plants from 1 Packet*	*Plants Needed Per Acre*	*Date to Sow Seed*	*Field Planting Date*	*Inches Between Rows*	*Inches Between Plants*
Asparagus Roots	1250	½ oz.	800	400	5800	4/1 –5/15	4/1 –5/1	60	18
Broccoli — Early	10000	⅛ oz.	5000	600	7200	2/15–3/15	4/1 –5/1	36	24
Broccoli — Late	10000	⅛ oz.	4000	500	7200	6/10–6/20	7/15–7/25	36	24
Cabbage — Early	8000	1/10 oz.	3500	350	15000	2/15–3/15	4/1 –5/1	24	15–18
Cabbage — Late	8000	1/10 oz.	2000	200	7000	4/25–5/10	6/1 –6/15	30–36	24
Cauliflower — Early	10000	1/20 oz.	5000	250	12000	2/25–3/25	4/10–5/1	30	18
Cauliflower — Late	10000	1/20 oz.	3000	150	9000	5/10–6/20	7/15–7/25	30–36	24
Celery — Early	75000	1/10 oz.	15000	1500	40000	2/15–3/10	5/1 –5/15	24–48	4–6
Celery — Late	75000	1/10 oz.	10000	1000	35000	5/10–5/25	7/1 –7/15	30–48	4–6
Eggplant	5000	⅛ oz.	2000	250	7000	3/10–3/25	5/20–6/10	36–40	24–30
Lettuce — Leaf	16000	¼ oz.	4000	1000	60000	2/15–2/25	4/1 on	12	8–10
Lettuce — Head	16000	⅛ oz.	4000	500	30000	2/15–2/25	4/1 –5/1	15–18	12–15
Muskmelon	1200	¼ oz.	800	200	1500	4/15–4/25	6/1 –6/25	60–70	60–70
Pepper	4000	⅛ oz.	2000	250	10000	3/15–3/25	5/20–6/10	30	20
Tomato	7500	⅛ oz.	3000	300	4000	3/1 –3/25	5/15–6/10	36–48	24–40
Watermelon	200	¼ oz.	150	35	1100	4/15–4/25	6/1 –6/15	96	60–70

EASTERN STATES COOPERATOR

JANUARY 1945

Basis of Merit in EASTERN STATES Vegetable Seeds

Good seed is the first fundamental of successful gardening. The most careful grower cannot succeed with poor seed even though he gives close attention to all the other factors of production. The ability of seed to produce a satisfactory and desirable crop cannot be determined by the appearance of the seed. It is for this reason that the *selective cooperative* service of the Exchange is of real assistance to vegetable growers whether they operate in their back yards or on a market gardening basis. *Eastern States seed* is seed of known performance. The parentage and past performance of a seed stock are the indexes the Exchange relies on in appraising future crop producing power.

☆ **Selection:** To make this program effective, the Plant Industry Project of the Exchange, through extensive trials at Feeding Hills, Massachusetts, and at other points in vegetable areas, tests seed stocks for distribution.

Every lot of vegetable seed distributed by the Exchange is included in these trials. Adaptation, trueness to type, productivity, and resistance to or freedom from disease are carefully studied. Varieties or strains must prove their worth before they are made available to Eastern States members.

☆ **Breeding:** In conjunction with the trial work, plant breeding work is also constantly in progress for the improvement of present varieties and the creation of new and better ones. The purpose of all this careful work is to determine and make available the best "consumer values" in seed. This *value* is measured in terms of *dependable performance* in the field, in the markets, and on the consumer's table.

☆ **Production:** The seed for distribution is procured by multiplying our own foundation stock seed and by purchases from sources of proven merit. The area of production is selected for its ability to produce economically high quality seed, as free as possible from disease.

☆ **Seed Treatment:** Certain diseases are carried on or in the seed and can be controlled by specific treatments. Seed for which an effective treatment has been demonstrated is so treated at the seed warehouse before shipment, where the chemicals can be properly and economically applied.

Seed so treated should not be soaked before planting, as germination may be materially injured.

☆ **Description:** Every lot of seed distributed will show a report of the germination, the date of test and a lot number. The lot number is a code reference to our records of the history, performance and production of that particular lot. Correspondence pertaining to the performance of *Eastern States seed* should include the specific lot number of the seed under consideration to aid investigation.

Save the package or the tag on your Eastern States vegetable seed. Refer to the lot number when you write for further information.

For the sake of uniformity in describing the comparative earliness, size, and other characteristics of varieties, several years' records from the Eastern States testing grounds at Feeding Hills, Massachusetts, have been used.

"Days to grow" indicates the relative earliness of varieties from seed to crop, and for kinds ordinarily transplanted, from field setting to market crop.

The number of days required by any particular variety to produce a crop will vary from place to place and from year to year, depending upon soil and seasonal conditions. Also characters of growth will vary. For instance, a particular variety of corn will normally grow a taller stalk the farther north it is grown and a shorter stalk the farther south it is grown.

☆ **Never be rough** with seed. The careful handling of certain vegetable seeds in every handling operation is exceedingly important to assure successful stands in the field. The Eastern States Farmers' Exchange has exercised every possible precaution in the harvesting, cleaning and shipping of such seed, fully realizing the extreme danger to germination from rough handling.

This precaution applies particularly to the larger seeds such as peas and beans which have paired cotyledons with dry, brittle embryos. Dropping a bag or walking on one may reduce germination of its contents as much as 10 percent or more by cracking the seed internally, yet you may see little or no evidence of physical damage.

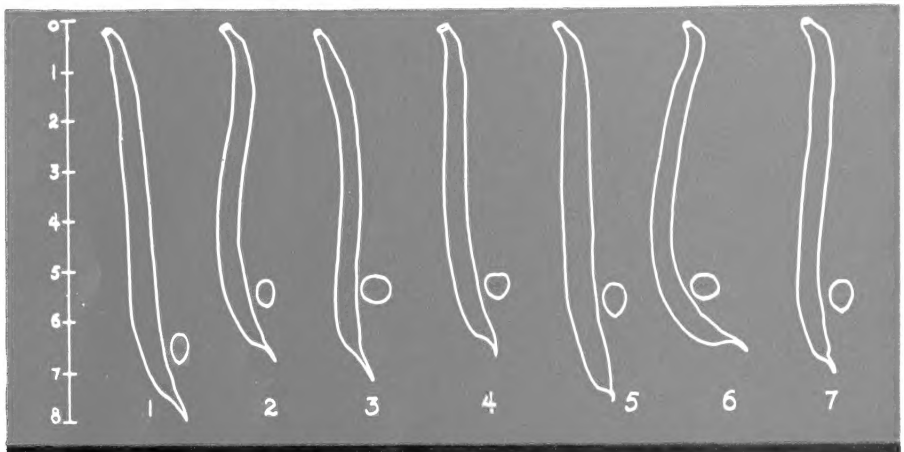
Likewise, the seed of beets and chard will crumble very readily. This injury breaks up the seed clusters and increases the loose hull accumulation which interferes with uniform seeding.

Description of Eastern States Vegetable Varieties and Brief Cultural Suggestions

Varieties with an asterisk (*) are the best quality for freezing.

ASPARAGUS

Mary Washington — (Available as seed only). A rust-resistant variety developed by the USDA. Spears are large, thick, green with a purple tinge, oval in cross section and of excellent quality, even when large. The tip scales remain tightly closed, permitting the growth of tall green spears before feathering. The outstanding variety for home garden or commercial planting.*



Want to compare the pod size, shape or cross-section of Eastern States bean varieties? They are: (1) *Bountiful,* (2) *Stringless Valentine,* (3) *Stringless Green Pod,* (4) *Stringless Tendergreen,* (5) *Sure Crop Wax,* (6) *Pencil Pod Wax,* (7) *Brittle Wax*

BEANS

BUSH GREEN SNAP

Stringless Valentine — An improved form of Black Valentine that is stringless. The pods are oval in cross section, dark green, nearly straight and of fine quality. The pods hold their color and texture well for distant shipment. The plant is large, erect and prolific. Black seed.

Bountiful — The plant is large, erect and prolific. The pods are flat, light green, slightly curved, brittle, stringless, slightly fibrous, but remain edible till fully grown. It is a good shipper. Seed yellow straw color.

Stringless Green Pod — The plants are erect, vigorous and mature with considerable uniformity. The pods are dark green, round in cross section, practically straight and smooth. The flesh is brittle, absolutely stringless and without fiber or parchment. Seed solid yellowish-brown.

Stringless Tendergreen — The plant is large, erect and compact, producing heavily over a short season. The pods are dark green, nearly round, slightly curved, and smooth. The flesh is brittle, stringless and without fiber. Seed brown, blotched with light fawn.

BUSH WAX SNAP

Pencil Pod Wax — The plant is large and very productive over a long period. The pods are curved and fleshy without strings. The flesh is golden yellow and of the highest quality. It is one of the most dependable wax beans. Black seed.

Brittle Wax — The plant is large, erect and moderately productive over a long period. The pods are slightly curved, brittle and succulent, without string, fiber, or parchment. Used extensively for canning, as the seed is light-colored and develops slowly. White seed with very dark brown to black broken-ring eye marking.

Sure Crop Wax — Large, vigorous, spreading plant, productive over a long period. The pods are dull yellow, flat but fleshy, brittle, stringless and with very little fiber. Black seed.

Bean Culture — Bush Wax and Green Snap — French's Horticultural

Plant after danger of frost in a fertile, well-drained, mellow soil, 1″ deep, 4″ apart in 2½ to 3′ rows, using ½ lb. of seed to 100′ of row (60 to 80 lbs. per acre). For continuous harvest, plant every 2 or 3 weeks to July 1 or later, depending on locality, allowing sufficient time for maturity before frost.

Seed must not be placed in contact with fertilizer. Burning will result.

BUSH SHELL OR FIELD

French's Horticultural — The plant is erect with short runners and very prolific. As a shell bean the pods are heavily splashed with deep carmine with large plump seeds. This variety is also used as a dry field bean. Seed pinkish-buff splashed with deep carmine.

Maine Yellow Eye — A high quality baking bean, popular in New England. The plant is of the short runner type. The beans are medium size, solid white with brownish-ochre markings around the eye, covering about ¼ of the bean. Matures uniformly, dropping its leaves at maturity, making them easy to cure in small loose ricks.

Lapin Marrow — Not available in 1945.

Geneva Red Kidney — A productive variety, seed of which is produced in an area free of seed-borne diseases. The dry beans are used for baking and are of excellent quality, dry and mealy. Seed reddish-brown in color and kidney-shaped.

Bean Culture — Bush Shell or Field

Plant after danger of frost in a fertile, well-drained, mellow soil, 1″ deep, 4″ apart in 2 to 3′ rows, using ½ lb. of seed per 100′ row (60 to 90 lbs. per acre).

Seed must not be placed in contact with fertilizer. Burning will result.

BUSH LIMA

Fordhook — The plant is large, upright, vigorous and very productive. Pods contain 3 to 4 large, plump seeds of the potato lima type. Dry beans are white with a tinge of green.

Bean Culture — Bush Lima

Plant after danger of frost in a warm, fertile, well-drained, mellow soil, 1″ deep, 4″ apart in 3 to 3½′ rows, using 1 lb. of seed per 100′ row (95 to 110 lbs. per acre).

Encourage quick germination and rapid seedling emergence by shallow planting in a warm, well-drained soil to overcome rhizoctonia and other soil-borne organisms frequently responsible for a poor stand.

Seed must not be placed in contact with fertilizer. Burning will result.

POLE LIMA

King of Garden — The plant is tall, a good climber, vigorous and highly productive over a long period. Pods contain 4 to 5 beans. Seeds are large, flat, white, fleshy and of excellent quality.

POLE SNAP

Kentucky Wonder — Has a distinctive beany flavor of high quality. The pods are fleshy but not attractive, because they are irregularly curved with constrictions between the seed. Seed buff-brown with indistinct vein pattern of darker shade.*

Bean Culture — Pole Lima and Pole Snap

Plant after danger of frost in a warm, fertile, well-drained, mellow soil, dropping 3 to 5 seeds 1½″ deep per hill, 4 x 4′ apart. Use 8 to

9′ poles set 2 to 3′ in the ground and well-braced. Where seed is dropped 4″ apart in 4 to 5′ rows, a trellis may be built with well-braced end poles and intermediate supporting poles every 12 to 16′ apart. Stretch top, middle and bottom horizontal wires and attach vertical strings such as binder twine every 8 to 12″ apart.

Encourage quick germination and rapid seedling emergence by a shallow planting in a warm, well-drained soil to overcome rhizoctonia and other soil-borne organisms which are frequently responsible for a poor stand.

Seed must not be placed in contact with fertilizer. Burning will result.

SOYBEAN

The soybean is one of the most nutritious and healthful of all foods. It is high in protein, fat, several vitamins, and a wide variety of amino acids. It is relatively low in starch and sugar, of which most diets contain too great a proportion. It therefore definitely improves the ordinary diet. It has been a substantial part of the diet in Oriental countries for hundreds of years but has until recently been grown only for animal feeding in America. The flavor and texture is unlike other kinds of beans with which the Occidental palate is familiar; so from among the hundreds of varieties available those most palatable to us must be chosen.

Varieties

Giant Green — A large green-seeded variety of relatively early maturity. When planted June 1 the beans should be ready to eat green in about 90 days or about September 1, and ready to thresh as dry beans 15 to 18 days later. The plants grow erect 18 to 24″ high with large leaves and rather coarse, woody stems. As they near maturity the pods become grayish-yellow and then black at complete maturity, each containing 2 or 3 green beans which shatter out readily. The beans can be used either green or dry but flavor and quality are generally considered better in the green shell stage. Yield is good but usually not as heavy as with longer season variety.

Bansei — A medium-size, yellow-seeded variety requiring about 105 days to reach green edible maturity and 18 to 20 days more for complete maturity as dry beans. The plants grow about 24″ tall, and are stiff and erect. The pods are borne profusely along the stem and usually each contains 3 seeds. They are quite resistant to shattering and can be left in the field until convenient to thresh. A good yielder.

Willomi — A large, yellow-seeded variety requiring about 105 days to reach green edible maturity and 18 to 20 days more for complete maturity as dry beans. The plants grow 24 to 30″ high and somewhat sprawling. The leaves are medium size and yellowish-green. The pods are borne profusely along the stem and usually each contains 3 plump seeds which shatter readily when mature so must be harvested promptly. Yield heavily green or dry.

Aoda — A large, green-seeded variety requiring about 120 days to reach green edible maturity and 20 to 25 days more for complete maturity as dry beans. Seeds are green throughout. The plants grow 30 to 36″ tall, and are strong and vigorous. The pods are borne profusely along the stem and usually each contains three seeds. Because of the long season required, this variety should not be used in New England except along Long Island Sound, but is well adapted to the longer growing season of Delaware, Maryland and southeastern Pennsylvania.

Cultural Suggestions

Plant about June 1 and after soil is well warmed, about 1″ deep and 3″ apart in 2′ rows. Proper inoculation is desirable for soybeans but when impractical to apply on small lots they will make entirely satisfactory growth if nitrogen is supplied in a regular garden fertilizer at the same rate as for other garden crops.

Rabbits are extremely fond of soybean foliage and if any rabbits are in the neighborhood, the soybeans should be protected by a fence.

Harvest as a green vegetable when the beans are well formed but the pods are still green. For shell beans allow pods to ripen and become at least partially dry on the standing stalk.

Uses and Methods of Preparation

Green Beans — Cook green beans immediately after being harvested. The fibrous pod cannot be eaten but the green beans can be either cooked in the pod and shelled later or they can be shelled and then cooked. To facilitate shelling, blanch the pods in boiling water for 5 minutes, drain and cool with cold water sufficiently to be handled. Cook the shelled beans in a small amount of salted water for 10 minutes after boiling starts.

Boiled Beans — Dry soybeans swell and cook to a tender condition even more readily than do other kinds of beans, but when they have reached the maximum degree of softness, are rather nut-like in texture and not "mushy" like navy beans.

To get best color, volume and flavor, soak in clear water overnight. Drain and cook in salted water for 75 minutes.

Baked Beans — Soybeans may be baked the same as navy beans, boiling as suggested above and baking slowly for 3 or 4 hours.

Roasted Soybeans — Soak 2 cupfuls of dried beans for about 12 hours in 1 quart of water to which has been added 1 heaping teaspoonful of salt. Cook just below the boiling point for one-half hour in the water in which they soaked; then roast in oven or corn popper to a light brown color.

Other Uses — Soybeans can also be used for puree of soup, croquettes, soybean chili, salads and many other tasty, nutritious dishes.

BEETS

TABLE

Crosby Early Wonder — Roots are semi-globular, with a small tap root. The flesh is blood red with zones of slightly lighter shade. The tops are dark green tinged with red, of medium height, and erect.

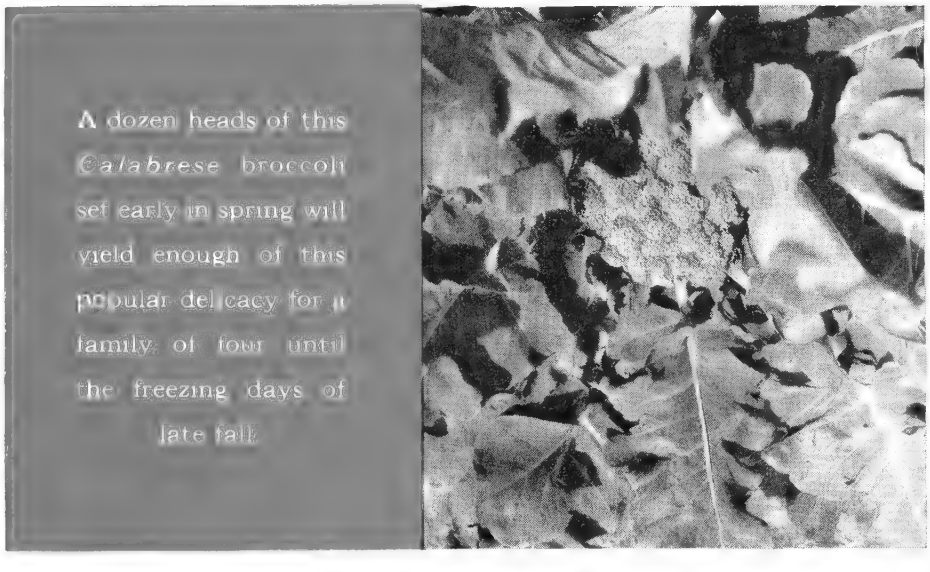
Detroit — The root is globe-shaped with dark red flesh, and the zones of slightly lighter color are indistinct. The tops are dark green tinged with red. A high quality beet for market, canning, or storage.

Beet Culture — Table Beets

One ounce of seed plants 100′ of row — 10 lbs. per acre. Sow as early as a fertile, well-drained, mellow soil can be prepared, dropping seeds ½″ apart, ½″ deep in 12 to 18″ rows. Thin seedlings to stand 1½ to 3″ apart and use thinnings as greens. For continuous harvest, plant every 2 to 3 weeks to August 1.

BROCCOLI

Calabrese — This vegetable should be much more widely used in home gardens. The edible heads are very high in vitamins A, C and G. A dozen plants set early in the spring will yield sufficient of this popular delicacy for a family of four until freezing in the fall. After the central green head is removed, a number of smaller heads are produced on stems 4 or 5″ long, continuing to produce in this manner throughout the summer if kept cut and ade-



quately fertilized; or seed may be sown in June or plants set in late July for harvest in September and October. Plants grow 3 to 4′ in height and become much branched.

Broccoli is prepared for the table similarly to asparagus or cauliflower, cooking only until tender (3 to 5 minutes), thereby retaining the bright green color, full flavor and high food value.*

Early One — An early-maturing broccoli ready for cutting a week earlier than the regular strain. This strain has been developed for its earliness and sure-heading qualities; it produces an abundance of side shoots after the first cutting.*

Broccoli Culture

For an early crop, sow in sterilized soil under glass (8 to 10 seeds per inch in 2″ rows) from February 15 to March 15. Transplant into 2½″ pots or 2½ x 2½″ apart in flats when first true leaves appear. After danger of hard frosts, the plants should be hardened by gradual exposure and set outside 2 by 3′ apart in a fertile, well-drained, mellow soil. For a late crop, sow in June outdoors, transplant in 5 to 6 weeks or thin to stand 2 x 3′ apart. Side-dressings of nitrogen may be advisable during the season.

A head of *Golden Acre* that would please the king's taste.

CABBAGE

EARLY VARIETIES

Golden Acre — An early uniform strain of Copenhagen Market. Plants are compact and of medium size. Heads are slightly flattened, solid, globe-shaped and of excellent quality. This variety is suitable for successive plantings to midsummer.

Yellows Resistant Golden Acre — A crop failure.

Marion Market — A yellows resistant variety of Copenhagen Market type, in season with late strains of Copenhagen. Plants large, leafy, producing oval heads weighing 5–7 lbs. Useful as a midseason variety.

Cabbage Culture — Smooth Green: Early and Midseason Varieties

One-quarter ounce of seed plants 100′ of row — 4 oz., per acre. For early harvest, sow in flats under glass (8 to 10 seeds per inch in 2″ rows) from February 15 to March 15. Transplant once in flats 2 by 2″ when first true leaves appear. Avoid crowding, drying out or overwatering. Control temperatures at about 65° F. and provide ample ventilation. Harden off by gradual exposure and withhold watering a week or 10 days before setting in the field. Soak thoroughly just before transplanting. Set outside 14 to 18 by 24″ apart as soon as ground can be prepared after danger of hard frosts. When transplanting, the field soil should be slightly richer than the soil in which the seedling plants were grown. For later harvest, sow at 2-week intervals, 5 to 6 weeks before transplanting in the field. Side-dressings of nitrogen may be profitable if growth is slow.

LATE VARIETIES

Penn State Ballhead — A very desirable high-yielding variety developed by Dr. C. E. Myers of the Pennsylvania State College. Plants are of medium size with short stems. The heads are flattened, globe-shaped and very solid. A good variety for kraut or winter storage.

Yellows Resistant Wisconsin No. 8 — A strain of Ballhead type selected for resistance to cabbage yellows. It is a leafy, medium stem type, producing globe-shaped heads. A late variety for winter storage. Use standard varieties unless the soil is known to be infected with cabbage yellows.

Drumhead Savoy — The plants are medium large, producing deep, rounded heads, and moderately solid. This variety is admired for its crumpled, dark bluish-green leaves and creamy white interior. The flavor and quality are distinctive and it stores well.

Mammoth Rock Red — A purplish-red variety used mainly for pickling and salads. The plants are of medium size with a short stem; the heads are oval and solid. Distinctly a cabbage for special markets.

Cabbage Culture — Late Varieties

Sow in outdoor seedbed, 4 seeds per inch in 12″ rows in April or May. One ounce of seed plants 200′ of row and should produce in excess of 2000 good plants — enough for one-fourth acre. Transplant 5 or 6 weeks later, 24 x 30 to 36″ apart. The field soil should be somewhat more fertile than the seedbed.

CHINESE or CELERY CABBAGE

This vegetable makes a splendid addition to the late fall garden. Its flavor is somewhat like that of cabbage but much milder and more delicate. It can be eaten either raw or cooked in nearly any of the ways practiced for cabbage or lettuce. It is delicious when eaten as slaw or salad. The leaves may be cooked as cabbage or like spinach or the mid-rib alone used and served more like asparagus.

About 25′ of row is suggested for a family of four.

Chihli — The outstanding variety. It is tall and sure-heading. The outer dark green leaves enclose a long, 18″ tapering head which when mature is very compact, white, tinted with green, crisp and sweet.

Chinese Cabbage Culture

Grown chiefly as a fall crop, for if grown in summer, the plant will likely go to seed before heading. Sow seed in July in 18 to 24″ rows. Use ⅛ oz. per 100′ of row or 4 oz. per acre. When plants are not over 2″ high thin to about 15″. Soil must be fertile. If plants are started in a seedbed, transplant when quite small -- about 4 weeks after the seed is sown.

A rich soil that is retentive of moisture and in good physical condition is necessary; side-dressing of nitrogen may be necessary if growth is slow.

CARROTS

Chantenay (Red Cored) — A red-cored variety, productive and of good quality. Roots are 5½″ long and 2–2½″ in diameter at the crown, tapering to 1–1½″ with a blunt bottom which tapers to a decided rat tail. The crown is small and slightly sunken. Generally used as an early bunching carrot.

Long Chantenay — A smooth-skinned, semi-stumped root averaging as a rule 1 to 1½″ longer than regular Chantenay, developing its color early. The top is smaller, but fully as strong as Red Cored Chantenay. The roots when harvested at bunching stage resemble Imperator in appearance but reach this stage about 10–14 days earlier. Seed supply is very short, and packets only are offered. Comments regarding its behavior in members' gardens will be very welcome.

Nantes Long — A rapid-growing variety practically coreless and of the highest quality flavor and texture. The root is 6½ to 7″ long and 1 to 1½″ in diameter, cylindrical and distinctly stump-rooted. The tops are small and must be handled carefully to avoid breaking.

Imperator (long strain) — Roots are 7–8½″ long, 1¾–2″ at shoulder and uniformly tapered to a semi-blunt end. The flesh is a rich orange color, fine grained, tender and of excellent color and the core is indistinct. The tops are of medium size and strong. Suitable for bunching or storage. Partially resistant to Cercospora leafspot. Definitely coarser, but more sure of a satisfactory crop than Bunching.

Bunching — A carrot well adapted for bunching for long distance shipping. The roots are 8″ long and 1¾–1½″ in diameter, nearly cylindrical with rounded shoulders and stump-rooted. The root is smooth and nearly free from hair roots and side root scars. The tops are short but strong. Well grown on good soils, this variety suits quality markets. Susceptible to Cercospora leaf spot.

Danvers Red Cored — A half long, late variety of exceptional quality adapted to fall use or winter storage. Roots are 7–7½″ long and somewhat stump-rooted. The crown is full, 2–2½″ in diameter. Flesh is bright orange-scarlet. Tops are medium large.

Hutchinson — A late, heavy yielding variety, good for fall use and winter storage, having a cylindrical root 10 to 14″ in length, 1 to 2″ in diameter, with principally an abrupt stump end. Flesh is deep orange, tender and of good quality when properly grown in a deep, light soil, well supplied with moisture. Roots should not stand more than 1 to 1½″ apart to avoid oversize, coarse growth. Tops are of medium size, strong and vigorous. About 80 to 90 days are required from seeding to bunching size, although this variety is generally sold as a box or trimmed carrot.

Carrot Culture

Sow after April 15, and for continuous harvest, successively every 3 weeks until July 15 in a deeply-loosened, well-prepared seedbed.

Sow ¼ oz. of seed per 100′ of row or 2 to 4 lbs. per acre, ¼ inch deep in rows 12 to 15″ apart. Thin seedlings to stand 1–2″ apart.

CAULIFLOWER

Super Snowball — A deep-headed strain that is more spreading than usual and gives better protection to the head, but requires tying. Best suited for early season planting for a crop in late June to early September. Ready for harvest about 65 days after transplanting. Heads usually 6–7″ in diameter, rather spongy and will wither if held long after cutting. It should not be used to compete with later, more solid varieties in late fall.

Danish Early — A sure-heading strain of Snowball variety suitable for a main crop in the fall, maturing about 75 days after transplanting. Plant is small and compact. Heads are well protected but require tying.*

Holland Erfurt — A sure-heading main crop variety. The plant is erect with folding inner leaves for self-protection. The heads are deep, compact with pure white curd. The crop matures in good succession for a continuous harvest. It gives best quality product when brought to maturity under southern New England conditions during the last half of November.

Cauliflower Culture

For an early crop, sow inside from February 15 to March 15. Harden off and set outside as soon as ground can be prepared after danger of hard frosts.

For late harvest, sow the seed about the middle of May, transplant into the field about July 1. As soon as heads begin to form, draw the leaves over and tie them together for protection against sun and rain and to afford perfect bleaching conditions. Cut heads while the white curd is compact and solid. Trim outer leaves to extend slightly beyond the curd for protection in handling and shipping. Side-dressings of nitrogen may be necessary if growth is slow. Set plants 20″ by 3′ apart.

Hollow stalks and browning of the curd, with or without an unthrifty condition of the plants, may indicate boron deficiency in the soil. If such conditions are found, consult your county agent or the Eastern States Farmers' Exchange fertilizer department for recommended treatment.

CELERY

Tall Fordhook (Summer Pascal Type) — A tall early strain of Fordhook closely resembling Summer Pascal but the plants are larger, more stocky and erect. Stalks are 8 to 9″ to the first joint, smooth, meaty, full heart, blanching with paper or cuffs to a light cream color. Not as brittle as Fordhook Emperor; therefore, it is easier to handle. Ready to harvest in 105 days from field setting.

Fordhook Emperor (Houser) — A strain of Fordhook with very high table quality but extremely brittle, so must be handled carefully in packing and shipping to avoid cracking and breaking. Stalks are 6 to 7″ long, very thick, smooth and meaty. Blanches slowly with paper or cuffs to a pale cream color. Ready for harvest about 120 days from field setting.

Green Celery Culture

One-quarter ounce of seed plants 100′ of row — 4 ozs. per acre. Sow seed outdoors about May 1 and transplant to field July 1 to 15. The soil should be deep and thoroughly prepared, and, if necessary, make side-dressings of available nitrogen fertilizer. When celery is fully grown, blanch with boards, earth or paper.

CHARD

Chard is a member of the same family as beets but has been developed for its foliage rather than for an enlarged root. It is most used as greens but the mid-ribs may also be cooked as asparagus or creamed celery. It ranks high among vegetables in content of vitamins, calcium and iron.

Twenty-five feet of row will supply adequately a family of 4 from early summer to freezing weather of fall.

Fordhook Giant — The heavy crumpled or savoyed leaves are dark green with a large white succulent stalk.

Lucullus — The heavily-crumpled or savoyed leaves are yellowish-green and the thick, broad succulent stalks are light green in color.

Swiss Chard Culture

One-half ounce of seed plants 100′ of row — 4 to 6 lbs. per acre. Chard is easily grown. Plants may be started in greenhouse or hotbed and then transplanted to the open field or

★ When careful handling of vegetable crops is backed up by Eastern States bred or selected varieties and strains, desirable quality will be there for the home table or for market.

★ Where bacterial wilt is not a problem, *Sugar and Gold* sweet corn provides an extra early variety of excellent quality. The kernels are a mixture of yellow and white.

planted directly outdoors as soon as soil can be prepared in spring. Sow 2″ apart, ½″ deep in rows 2′ apart. Thin seedlings to stand 4 to 6″ apart. By breaking off and using only the full-grown outside leaves, a continuous harvest may be enjoyed throughout the season.

CORN

HYBRID — MIXED YELLOW AND WHITE

Sugar and Gold — An extra early high quality sweet corn with a mixture of yellow and white kernels. It matures about 3 days ahead of Spancross 13.4 but is very susceptible to bacterial wilt so should only be grown north of Massachusetts, or for trial in western or central Pennsylvania or where bacterial wilt does not occur.

The stalk is rather slender, about 4′ tall, with reddish foliage. The ear is 6–6½″ long with 8 or 10 rows of tender sweet kernels, some yellow and some white. The husk is rather short and light. In areas where adapted it is a splendid corn for the first early planting in home gardens and for limited planting to supply the first few days of a market that will accept high quality in spite of mixed color kernels.

HYBRID — YELLOW

Early Golden 1.13 — A very early, distinctly high quality yellow hybrid requiring only about 79 days from planting to roasting ears. The stalk is slender but stiff and strong, averaging about 5½′ tall in central Massachusetts. Several tillers are normally produced by each plant. The ear is about 7″ long, 12 rows and nearly cylindrical in shape with little taper toward the tip. The husk is medium heavy. The kernels are sweet and considerably more tender than either Spancross or Marcross. It is highly resistant to bacterial wilt. Desirable for either home gardens or for early markets interested in high quality.

Marcross 13.6 — A high-yielding, early, yellow hybrid resulting from a cross of two Connecticut inbreds — 13 and 6. It reaches roasting ear stage about 82 days after planting and produces ears extra large for the season, about 8″ long with 12 to 14 rows. The eating quality is fair and very acceptable on many markets. The plants grow about 5′ tall and are highly resistant to bacterial wilt. It is one of the most popular and widely used of all varieties for the main early market. It is not recommended as a first choice for home gardens where higher quality varieties should be used.

Carmelcross 30.13 — This hybrid replaces 39.13 of former years. The inbred 30 is a selection by the Connecticut Experiment Station out of the inbred Purdue 39 formerly used, giving a slightly larger ear in the resulting hybrid. Otherwise the characteristics are the same. Plants are moderately leafy, growing to a height of 5¼′ and are highly resistant to bacterial wilt. Ears are large with 12 to 16 rows and a heavy, tough husk which covers the tips well. They reach roasting ear stage about 84 days after planting. Quality is excellent. This hybrid is very desirable for either home garden or market in the midseason period. Kernel color may be too light for a satisfactory canned product.

Golden Cross Bantam — This is a cross between two inbreds of Golden Bantam, 51 and 39, developed for the canning trade by Purdue University. It is the most widely grown hybrid in its season for market as well as processing, because of its high quality and long period of prime condition. The hybrid offered by Eastern States has been improved by the use of a descendant of one of these inbreds, so that the improved strain produces a stiffer, more leafy and darker green plant, a larger ear, a higher percentage of 14-rowed ears and matures about a day later than the strain previously offered. The ears maturing in about 99 days are about 8″ long, cylindrical, with 12–14 rows of a good husk cover. Plants are dark green, leafy, about 6½′ tall, highly resistant to bacterial wilt. This variety should supply the main crop in every home garden and with its great uniformity in growth and maturity as well as exceptional quality and heavy yields, it is especially adapted for canning, freezing or mid-season markets.*

HYBRID — WHITE

Narrow Grain Evergreen 14.13 — This is a midseason white, wilt-resistant hybrid that matures for eating or processing 95 to 100 days after planting. Plants are 7 to 8′ tall, vigorous and strong. Ears are 7 to 8″ long, usually well tipped and with 16 to 18 rows of deep, white kernels of high quality.

OPEN POLLINATED — YELLOW

Golden Bantam — A standard variety with cylindrical slender ears of high quality. The

plant tillers (suckers) freely. It is susceptible to bacterial wilt.

Bantam Evergreen — A high quality corn for midseason or late. A selection from a cross of Golden Bantam and Stowell's Evergreen. It has the Evergreen type of ear, with deep yellow kernels of high quality. Plants are large and vigorous.

Sweet Corn Culture

Two ozs. of seed plants 100′ of row — 10 to 12 lbs. per acre. Plant after danger of hard frost, 1″ deep, 8″ apart in 30 to 36″ rows. When planting in hills, drop 4 to 5 seeds 30″ apart and thin to 3 stalks. For succession harvest, plant at weekly intervals or use preferably later — maturing varieties.

CUCUMBER

PICKLING (BLACK SPINE)

Association Pickling — A highly desirable black spine pickling strain developed by the Michigan Experiment Station for the National Pickle Packers' Association. The plants are very prolific and the fruit is dark green, symmetrical and square-ended, suitable for pickling at any size.

Chicago Pickling — The most widely used variety particularly adapted for large pickles. The fruits are thick, uniform, medium-green and square-ended. The plants are very prolific.

SLICING (WHITE SPINE)

Straight 8 — An early variety producing cylindrical symmetrical smooth fruits well-rounded at the ends. When ready for use the color is deep green and the fruit is free from light tips and stripes. Highly productive.

A & C Special — A desirable market cucumber because of its uniform length, very dark green color and high productivity. The fruits taper at both ends, but have thick flesh with a small seed core.

Cucumber Culture — Pickling and Slicing

One-half oz. of seed plants 100′ of row — 2 to 3 lbs. per acre. Plant after danger of frost is over and up to the middle of June in rows 5′ apart; or in hills 5 x 5′, 5 seeds to a hill. Plant 1½″ deep.

EGGPLANT

New Hampshire Hybrid — A distinct early type, originated by Professor J. R. Hepler of the University of New Hampshire from a cross between Early Dwarf Purple and Black Beauty and selected by him through five generations for earliness, size, and color. The plant is 20 to 24″ high, spreading, with small green serrate leaves; fruit is glossy, deep purple and only slightly smaller than Black Beauty and of the same shape. It is generally reported to be two weeks or more earlier than Black Beauty and New York Improved.

This variety was entered by Professor Hepler in the 1938 All-American Trials and received a silver medal.

Black Beauty — A standard variety of eggplant 2½ to 3′ tall with an equal spread. Fruits are large, egg-shaped, 6 to 8″ long, dark purple and remain firm long after picking.

Eggplant Culture

Eggplant is a hot-season crop. Sow inside after March 1, 1 seed per inch of row — ¼ oz. per 100′. Maintain temperature of 65° to 75° F. Transplant at least once, preferably into individual containers. One ounce of seed should give 2000 plants — enough for ¼ to ⅓ acre. After May 20, when soil is thoroughly warm, transplant into the field 2 to 3′ by 3 to 5′. Nearly neutral soils favor growth but diseases are usually less troublesome on more acid soils.

ENDIVE

Full Heart Batavian — A variety having broad, more or less twisted and waved leaves with thick white mid-ribs. The inner leaves form a fairly firm head which blanches to a creamy white and is crisp, tender and of fine flavor. Unsurpassed for salads.

Green Curled Ruffec — A curled or fringed-leafed variety, used principally as a late fall crop, although suitable for early spring culture. Plants are 16–18″ in diameter, tufty and full in the center; the mid-rib is an inch broad, thick and tender. The heart blanches easily, is tender and of excellent quality.

Endive Culture

One-half ounce of seed plants 100′ of row — 4 to 5 lbs. per acre. For an early crop, sow about April 15 and for the late crop July 1 in fertile, moist soil, ½″ deep in rows 20″ apart.

Thin seedlings to 12″ apart. When nearly mature, the heart is blanched usually by tying outer leaves together over the center. This should be done only when the plant is quite dry. Moisture in the heart starts decay.

KALE

Blue Scotch — Bright bluish-green, finely crumpled leaf almost completely hiding the mid-rib, moderately hardy, stands hard-freezes but seldom lives over a severe winter. Attains height of 20″.

Blue-Green Siberian — Dull bluish-green color, coarsely crumpled with nearly flat mid-rib. Very hardy, will live over most winters.

Kale Culture

One-fourth ounce of seed plants 100′ of row — 2–3 pounds per acre. Sow July 1 to 15, ½″ deep in 18–24″ rows. Thin seedlings to 18″ apart in the row. Two or more cuttings should be secured.

LETTUCE

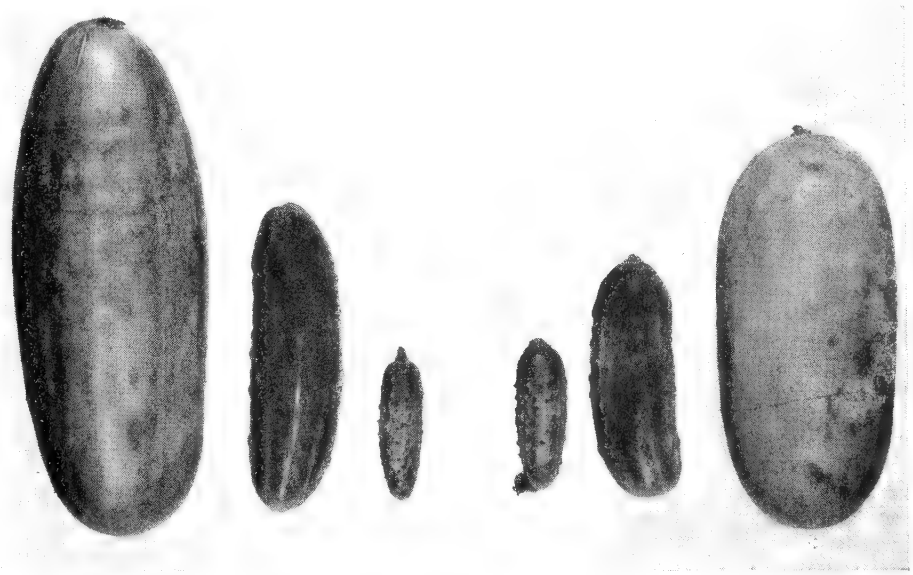
Black Seeded Simpson — An early loose-leafed variety that can be used in the home when very small. The plant is hardy and vigorous, doing well in midsummer. The leaves are yellow-green, slightly frilled and crumpled, forming a compact bunch at the heart, which is crisp and tender.

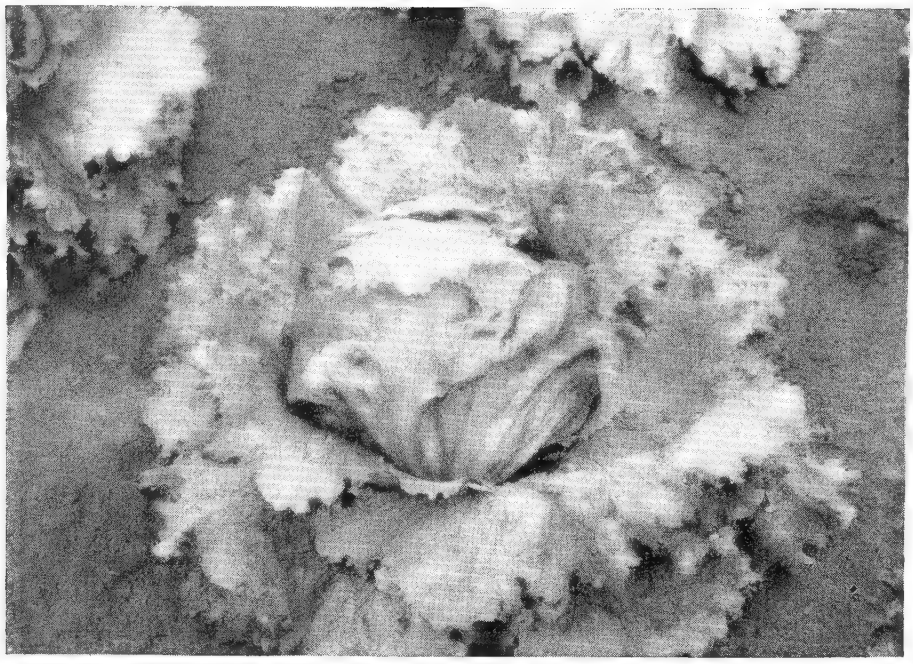
White Boston — A good white-seeded butterhead variety. The leaves are light green and free from brown tint. The leaves are thick, smooth, the heart is buttery yellow and of excellent quality. It is especially adapted for home gardens and near-by markets. It is earlier than the iceberg types.

New York 12 — A very important white-seeded, crisp head variety. It has dark green foliage, develops a large solid head, matures quickly and has good quality. It is being replaced somewhat by Imperial 847, which is somewhat more sure heading, although slower growing. New York 12 should still find a place because of its rapid growth for the first early spring crop.

Imperial 44 — A strain of the "Iceberg" type developed by the USDA and found by Cornell University to be well adapted to the northeastern United States. The plant is of medium size with heads slightly flattened and very solid. Somewhat subject to tip burn. This variety apparently needs a very uniform moisture supply and probably heavy fertilization.

★ These are two leading varieties of pickling-type cucumbers. The three on the left are *Chicago Pickling* and the three on the right are *Association Pickling*.





★ Much deserved popularity has come to *Great Lakes* lettuce because of its high quality and outstanding ability to head in midsummer.

Imperial 847 — A lettuce of the "Iceberg" type selected by Dr. I. C. Jagger of the USDA for summer and fall production. Very sure heading. Heads somewhat flat but solid and crisp. This variety in many locations shows indications of being a more dependable cropper than New York 12, but is slower growing. Black-seeded.

Great Lakes — A most recent introduction by USDA and Michigan Experiment Station which is outstanding in its ability to head in midsummer, the seed stalks developing very slowly even under conditions of high temperature. It received the bronze medal award in the All-American new variety selections of 1943.

The outer leaves are light grass green, large with waved edges, nearly flat blade, midvein thick and somewhat coarse. The heads are large, 6 to 7″ in diameter and 5 to 6″ high, extremely hard and solid weighing about 2 lbs. each. The inner leaves are crisp and brittle, tightly packed and white to pale green in color.

This variety is highly resistant to tip burn and bottom rot, but some loss may occur from aster yellows, the leaf hopper carriers of which are most numerous in midsummer.

This is the most promising variety so far developed for the successful production of summer head lettuce in Eastern States territory.

Lettuce Culture

Early Crop — One pound of seed produces plants for one acre. Sow in greenhouse in early February. Transplant in 2–3 weeks to flats 2 x 2″. Harden off and set in field as soon as danger of hard freeze is past, 12 to 18″ apart in 12 to 15″ rows.

Later Crops — One-half ounce of seed plants 200′ of row — 2 lbs. per acre. As early as soil can be finely fitted sow ¼″ deep in 12 to 15″ rows. Thin seedlings to 12 to 18″. For succession, sow at 2-week intervals to July 25. Field soil must be rich for good crop.

MELONS

MUSKMELON — SALMON FLESH

Emerald Gem — A good home and market garden variety but not a shipping melon. A two-pound globular melon slightly flattened, 4½ by 5½″, ribbed, outer color green to yellow and slightly netted. The flesh is thick, salmon-colored, sweet and the seed cavity is very small.

Honey Rock — This nearly round, medium-size, 5½ by 6″ melon weighs 4 to 5 pounds. The skin is gray-green and is covered with a coarse netting. The flesh is thick, orange-salmon in color and has a typical musky flavor. A home and market melon but not for long shipment.

Hale's Best 112 — One of the best early market melons. Fruits oval, very slightly ribbed, and the hard rind is heavily netted, making it a good shipper and attractive in appearance. The flesh is very thick, sweet, free from stringiness and a rich deep salmon color. The seed cavity is small. Recommended for New England and northern Pennsylvania.

Hale's Best 36 — One of the best early market melons. Fruits nearly spherical, slightly ribbed and have a heavily-netted hard rind. The flesh is rich salmon color, thick, sweet, and free from fiber. A popular melon for shipping. Recommended for southern Pennsylvania, Delaware and Maryland.

Hearts of Gold — A very popular mid-season variety for home or market garden use. Fruits are practically round, 6″ in diameter, weigh 4 lbs., distinctly ribbed and covered with a fine gray netting. Flesh is very thick, deep pink-salmon, tender and sweet, having a characteristic musky flavor.

Bender's Surprise — One of the most important varieties for home and market gardens, ripening in 95 days. Fruits weigh 7 pounds, oval in shape, 6 by 8″, with light green skin turning to a golden tint on ripening and has coarse netting. Flesh is firm, thick, salmon-colored and of good flavor.

Muskmelon Culture

One-half ounce of seed plants 100′ of row — 2 to 3 lbs. per acre. For early forcing start under glass in veneer bands or pots about April 1, develop slowly and transplant after hardening about May 1–15. Plant outdoors May 15 to June 1 either in rows or hills 1″ deep. If in rows, make rows 5′ apart and thin plants to 12″ apart in the row. If in hills, make hills 4 x 6′ apart, allowing 3 or 4 plants to the hill.

WATERMELON

White Mountain — This is an early small-fruited variety developed by the University of New Hampshire, adapted to many areas formerly considered too cool for watermelon production such as much of central and northern New England and the higher elevations of Pennsylvania. On light soils in central New England, ripe melons have been harvested by August 1, 70 days after planting seed, with continued production until frost. In warmer areas this melon does not do as well. Fruits are about 6″ long by 5″ in diameter and weigh 3 to 5 lbs. The rind is thin and brittle and will not stand shipping or rough handling. The color is light green with irregular darker stripes. The flesh is medium red, crisp and sweet. It deserves a trial in the areas where adapted as described.

Northern Sweet — An early prolific variety for local markets introduced by the Minnesota Agricultural Experiment Station from Siberia. The fruits are small, 8–10 lbs., globular, dark green, striped with medium green. Rind is tough but thin. Flesh deep orange red, medium-grained and stringy when over-ripe. High sugar content. White seeds.

Cole's Early — An early melon of excellent quality, particularly adapted to the home garden. Fruits are exceptionally large for so early a variety, weighing 20 pounds, slightly oval with irregular mottled broad stripes of light and dark green. Flesh is pink-red, crisp and of good flavor. Seeds are black.

Kleckley's Sweet — A second early variety of medium to large size, weighing 30 pounds, oblong in shape and dark green in color. Rind is thin. Flesh is bright red, very sweet, firm, solid and of excellent quality. Seeds are white. Will not stand very rough treatment in shipping, but especially good for local markets and home use.

Watermelon Culture

One ounce of seed plants 25 to 30 hills or 200′ of row — 2 lbs. per acre. For early forcing start under glass in veneer bands or pots early in April, and about May 15 transplant into field 2′ apart in 8′ rows. Seed may be sown direct in the field after soil has become warm. Plant 1″ deep in hills or rows. If in hills, plant 8 seeds 8 x 8′, later gradually thinning to 3 or 4 vines per hill. If in rows, space seeds 1′ apart in 8′ rows, later thinning vines to 2′.

ONION

ONION SEED — YELLOW

Ebenezer — Seed of this variety is used extensively in growing sets which when planted the following spring produce an early crop. Early spring planting also gives marketable bulbs the same season. Bulbs are flat but deep, of medium size, dark yellow, very firm, mild, and with a thick skin.

Early Yellow Globe — An early, yellow variety, medium-sized, spherical, firm and solid with tough clinging skins of a deep yellow color. The flavor is mild and the quality and texture good. It is a satisfactory storage onion.

Yellow Globe Danvers — A yellow variety that is a very popular storage onion. Bulbs are medium large, round, firm and solid. The flesh is white with a slight yellow tone.

Utah Valencia — A late yellow-skinned variety that is large and globular. The flesh is white, very mild and of pleasing flavor. A very good strain for winter storage, of the Sweet Spanish type.

ONION SEED — WHITE

Silverskin White Portugal — Grown for white onions sets which produce an early market, white onion. Also used for small pickling onions and good for a late market onion from seeds. Bulbs are medium-sized, thick, flat, clear white, hard, fine-grained and of pleasing flavor. It is the most satisfactory white onion for the home garden because of its many uses.

Onion Culture

One-half ounce of seed plants 100′ of row — 4 to 5 lbs. per acre. Sow in field from April 1 to May 1, ½″ deep in rows 20″ apart. Thin seedlings to stand 4″ apart. For producing transplants, sow seed in hotbeds or greenhouses January 15 to February 15, harden off and transplant seedlings to field about April 25.

PEAS

WRINKLED

World Record — A good pea for the first early market and for the home garden. Vines are semi-dwarf. Pods average about 3½″ long, are medium green, broad and well filled with peas of good size and color and of good quality for the season.

Thomas Laxton — A second-early semi-dwarf pea of very highest eating quality, being tender and sweet when at proper stage of maturity. It is the premier home-garden variety and is being extensively used for quick freezing. The vines are light green, and productive. While support is not essential, it makes harvesting in the home garden much easier. The pods are large, straight, square-ended and tightly filled with from 7 to 9 peas.*

Little Marvel — A dwarf pea of exceptional quality for the home garden. Pods are dark green, tightly filled and borne in doubles, therefore very prolific. This variety shells out a high proportion of peas per unit weight of pods.

Laxton's Progress — The largest-podded and most attractive pea of the Laxton group. Vines and pods dark green, peas are large and of high sugar content. Vines short.

Hundredfold — Pods dark green, and well filled with large peas of high sugar content. Due to habit of bearing pods double, this strain of the variety is especially productive.

Gilbo — An early strain in the Stride group with open type dwarf vines somewhat resistant to aphis attack. The pods are dark green, slightly curved with eight or nine large dark green peas. Resistant to fusarium wilt. Available at Eastern States warehouses only.

Alderman (Dark Telephone) — The best of all tall, late peas for home and market gardens. Pods are plump to round, dark green and well filled. The plant branches and bears profusely over a long, late picking season. The vines must be well supported with tall brush or wire. Wider row spacing is more necessary than for varieties with shorter vines. Resistant to fusarium wilt.

EDIBLE POD

These peas are not shelled before eating but are cooked and eaten, pods and all. For best quality this must be done shortly after the peas *begin* to form inside the pod. After the peas are fully developed, the pods become papery and tough. When pods are kept picked at this early stage, these varieties will yield large quantities of delicious pods over a long picking season. Both are resistant to fusarium wilt.

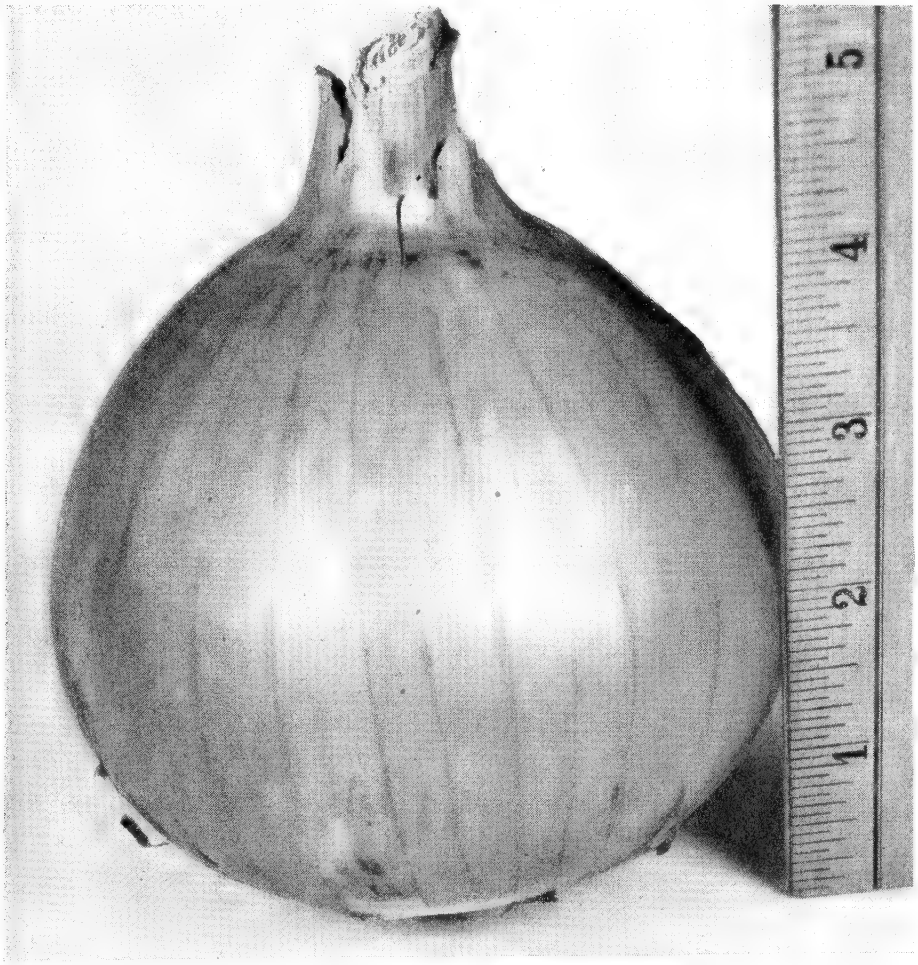
Dwarf White Sugar (Lancaster county, Penna. Strain) — The pods of this white-blossomed variety reach edible maturity at a very early age — about 50 days. The vines are about 30″ tall — producing prolifically the 2 to 2½″ long edible pods.

Mammoth Melting Sugar — These 4″ pods are not ready for eating until about 75 days after planting, when they are broad, occasionally twisted, brittle, succulent, free from parchment and of high sugar content. Vines grow 60″ tall and should be supported.

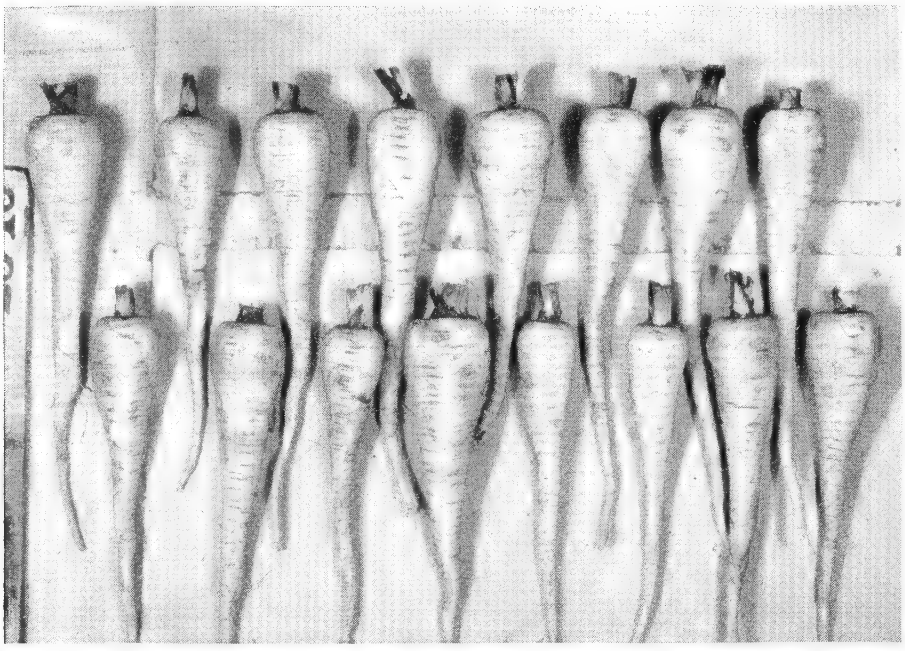
Pea Culture

Sow one pound of seed per 100′ of row — 90 to 150 lbs. per acre — on fertile well-drained soil as early in the spring as soil can be worked. Place seeds 1″ apart and cover with 1 to 2″ of soil. Single rows should be about 3′ apart. Some prefer planting twin rows 8 to 12″ apart with 40″ or more between pairs. Brush or wire can be put between the rows of each pair for support.

Thorough seedbed preparation, high fertility, early planting and weed control are essential for a good crop of peas. Fertilizer must not come in direct contact with the seed. Tall growing varieties must be supported by brush or wire and such supports make harvesting of all varieties easier.



★ **This is the "Onion with Personality" — the *Utah Valencia* about which John Andrew wrote in the November COOPERATOR to the delight of many members. This particular one weighs 18 ounces.**



Most popular variety of the bright, smooth, white parsnips is the *Hollow Crown* pictured here. Roots are six to eight inches long.

PARSLEY

Paramount — A long stem, dark green, moss-curled variety that is frost hardy and slow growing. It develops to full growth in 120 days but can be cut earlier.

Parsley Culture

One-half ounce plants 100′ of row — 3 to 4 lbs. per acre. For early summer harvest, plant about April 1 and to winter-over with some protection, such as straw or sash, plant from August 1 to September 1. Sow in soil that is fertile, barely covering the seed in rows 12″ apart. With a light seeding, no thinning should be necessary.

PARSNIP

Model — A parsnip of the Hollow Crown type but less hollow below the crown than the standard. The root is of medium length (6 to 10″), about 2½ to 3″ in diameter at the top, free of side roots with skin smooth and quite white. The edible quality is excellent, being tender and sweet especially after freezing. Requires about 150 days to make full growth.

Hollow Crown — The most popular variety of bright smooth white parsnips. Roots are 6–8″ long, 2½–3″ at the shoulder, hollow-crowned and uniformly tapered, carrying good thickness from crown to tip.

Parsnip Culture

One-half ounce of seed plants 100′ of row — 4 to 6 lbs. per acre. Sow seed in early spring ½″ deep in rows 15 to 18″ apart. Thin seedlings to stand 4″ apart in row. Seed is very slow to germinate.

Soil should be well prepared and not overbalanced with nitrogen or the plants will tend to grow large tops but small roots.

PEPPERS

SWEET

Early Giant — A sweet pepper of the bullnose type for home and market gardens. Plants are dwarf, upright and very productive. Fruits 4½″ long and 3½″ in diameter, are gently tapered, 3-lobed, of mild flavor, and deep green changing to bright red at maturity.

Italian Sweet — Earlier than some strains of Early Giant. Plants are medium green with medium size leaves. Fruits are conical, nearly straight, 5 to 6″ long, 2½″ wide at the shoulder with the stem insertion nearly flat, and borne pendant. Fruits are dark green, maturing to a deep red with a slightly roughened skin which is not glossy. The flesh is medium thick. Flavor is sweet and mild, better than other peppers of similar wall thickness. This variety sets fruit heavily under conditions causing vegetative growth in other varieties.

This variety should find a place in every home garden because of its quality, but it may not meet with favor in some markets because of its long tapering shape.

World Beater — A late variety popular with market gardeners and shippers. Fruits are 5″ long, 3½″ in diameter and 4-lobed, thick-fleshed, mild and sweet, glossy green, changing to bright red at maturity.

California Wonder — An outstanding late variety used principally for market and shipping. Fruits are 4½″ long and 4″ in diameter, 4-lobed, chunky, smooth and deep green changing to bright crimson at maturity. The flesh is exceptionally thick.

HOT

Long Red Cayenne — An early hot variety, used largely for pickles, canning and drying. Plants are large and productive. Fruits 5″ long, ¾″ in diameter, tapering, frequently twisted, deep green changing to brilliant red at maturity and very pungent.

Pepper Culture

One ounce of seed produces about 2000 plants, 5 ozs. required per acre. Sow inside about March 15, transplant once or twice and finally set in field after danger of frost is over, 20 by 30″ apart. A moderately fertile soil is desirable.

PUMPKIN

New England Pie — A small, high-quality pie pumpkin, also known as Small Sugar. Fruits are round, flattened at the ends, somewhat ribbed, and weigh 6 to 8 lbs. The skin is smooth, hard and a deep orange color. The flesh is sweet, thick, orange-yellow and of high quality.

Connecticut Field — A field variety grown for stock feed, canning, pie stock and Halloween decorations. Often planted in corn fields. Fruits are large, 15 to 25 lbs., round and flattened at the ends. Surface is hard, smooth, ribbed and deep orange color. The flesh is thick, orange-yellow, sweet but coarse.

Pumpkin Culture

One ounce of seed plants 20 hills — 4 lbs. per acre. Plant after danger of frost, 1″ deep in 8 x 8′ hills, 5 seeds per hill and thin to 2 or 3 plants per hill.

RADISH

Early Scarlet Globe — The most popular home and market garden radish, very early, consequently suitable for forcing under glass. Roots are oval, bright scarlet with a small to medium top. Flesh is of high quality, crisp and tender.

Sparkler White Tip — The roots of this variety are round, smooth, dull scarlet-red, with the lower ⅓ of the root white. The flesh is mild, white, crisp and tender. A very attractive radish when bunched for market and when served on the table because of its two-color skin.

White Icicle — The earliest and most extensively used long, white, summer radish. The tops are small. The roots are 5 to 6″ long, slender, of uniform thickness and smooth. The flesh is very crisp and mild.

Crimson Giant — A second early with deep crimson globular root, remaining crisp and sweet for a long time as it increases in size, while other varieties become hot and pithy with age. Roots 1–1½″ in diameter with white flesh.

Radish Culture

One ounce of seed plants 100′ of row — 12 lbs. per acre. For continuous harvest, sow every 2 weeks from April 1 to September 1 in a fertile and well-prepared seedbed. Sow ½″ deep in rows 12″ apart. Uniform planting with seed ½″ apart in the rows should require no thinning.

RUTABAGA

Macomber — This strain was developed by growers in Bristol county, Massachusetts, and is well adapted to the Cape Cod region. Roots are ovate in shape, 5 to 6″ in diameter, weigh-

ing 4 to 5 lbs., white, but rose-colored on top. Flesh is white, crisp, firm, of delicate flavor and excellent quality. Seed should be planted about July 15 so that most growth is made during cool fall weather.

Long Island Neckless Purple Top — A slightly slower growing variety than Macomber so should be sown correspondingly earlier. Roots are 4 to 6″ in diameter, weighing 3 to 4 lbs., yellow but purple on top, obovate in shape. Flesh is yellow, firm, sweet and tender.

Rutabaga Culture

As for all root crops, the seedbed should be deeply prepared and well fertilized. One ounce of seed plants 400′ of row — 2 lbs. per acre. Sow ½″ deep in 18 to 24″ rows from June 15 to July 10 or just in time to allow maturity before hard freezes. Thin seedlings to 6 to 8″. Seed is sometimes broadcast and raked in lightly, using 3 to 4 lbs. per acre. For storage, leave roots in the ground until late fall, then harvest before a hard frost and store in a cool, moist cellar.

A watersoaked browning or blackening of areas in the fleshy root may indicate boron deficiency in the soil. If such a condition is found, consult your county agent or the Eastern States Farmers' Exchange fertilizer service for recommended treatment.

SALSIFY

Mammoth Sandwich Island — An improved variety. Commonly known as "vegetable oyster." Roots are 6 to 8″ long, 1 to 1½″ thick, tapering, smooth and dull white. Roots may remain in the field over winter similar to parsnips. Used principally in soup stock.

Salsify Culture

One ounce of seed plants 100′ of row — 7 to 8 lbs. per acre. Sow in a fertile soil from April 15 to May 1 in a mellow seedbed. Sow ½″ deep in rows 2′ apart. Thin seedlings to 3″ apart in the row.

SPINACH

Dark Green Bloomsdale — A fast-growing, dark green, most attractive savoy spinach. The leaves are thick, crumpled and erect, forming a large vase-shaped plant with a spread of 12 to 16″. In warm weather with long days it shoots seed stalks within a few days after reaching marketable size, so ordinarily it has been used only for the first spring and early fall crops.

It is not resistant to yellows (mosaic) and should not be used where that disease is prevalent.*

Long Standing Bloomsdale — A second early and main crop variety standing 12–14 days longer than regular Bloomsdale, but not as fast growing. The thick, crumpled, rosette leaves are erect, forming a large plant with a spread of 12 to 16″. May be sown from earliest spring planting until midsummer, realizing that all spinach seeds quicker in midsummer.

Summer Savoy — Acceptable seed not available.

Virginia Blight Resistant Savoy — A savoy variety resistant to blight for fall cutting. Plants are vigorous and seed rather quickly if planted before August 15 to September 15, depending on location and weather. The rosette leaves are thick, crumpled and erect, forming a large plant with a spread of 12–14″. Also may be wintered over where temperatures are not too severe and some protection is available.

Old Dominion — An erect, dark green, slightly-crumpled variety particularly adapted to wintering over south of Massachus tts. It is slower growing than Virginia Blight Resistant and stands longer in the spring. For overwintering in southern New England, plant in early September; Pennsylvania, Delaware and Maryland, in late September. Not adapted to spring planting.

Spinach Culture — All Varieties Except New Zealand

One ounce of seed plants 100′ of row — 8 to 12 lbs. per acre. Sow seed ½″ deep, 2 to 4″ apart in 14 to 18″ rows. The seedbed should be well drained, fertile, and finely prepared. Side-dress with nitrogen as needed during the growing season.

New Zealand — Not a true spinach but of similar quality when cooked. Thrives in hot weather when other spinach bolts to seed. Plants are branched, often spreading 3 or 4′, and grow to a height of 1–2′. The leaves are thick, dark green and somewhat triangular in form. Only the tender branch tips should be used and frequent cuttings can be made all summer.

Spinach Culture — New Zealand

One-half ounce of seed plants 100′ of row — 3 lbs. per acre. Soak seed 48 hours before planting to hasten germination. Sow from May 1 to June 1 for summer use, in hills, 3 x 4′ apart, 4 seeds per hill and 1″ deep. Seedbed should be well drained and finely prepared.

SQUASH

SUMMER BUSH VARIETIES

Early Prolific Straight Neck — This strain produces medium-sized plants bearing smooth-skinned fruits 10–12″ long, uniformly light orange-yellow in color with no flecking. Seed cavity about 4″ in diameter and the blossom end is rounded to a small scar. This strain sets heavily and produces over a long period.

Long Cocozelle — A second early summer variety with cylindrical smooth, straight fruits, dark green with lighter stripes, which change to deep yellow at maturity. Flesh is firm and greenish-white and the best quality of all varieties of this type. It is very prolific, picking over a long period. Fruit can be picked in various stages of growth from 6 to 20″ in length; the larger ones require paring.

Squash Culture — Summer Bush

One ounce plants 50 hills — 3 to 4 lbs. per acre. Plant after danger of frost up to June 15, 1″ deep in hills 4 x 4′, 6 seeds per hill. Thin to 3 plants per hill.

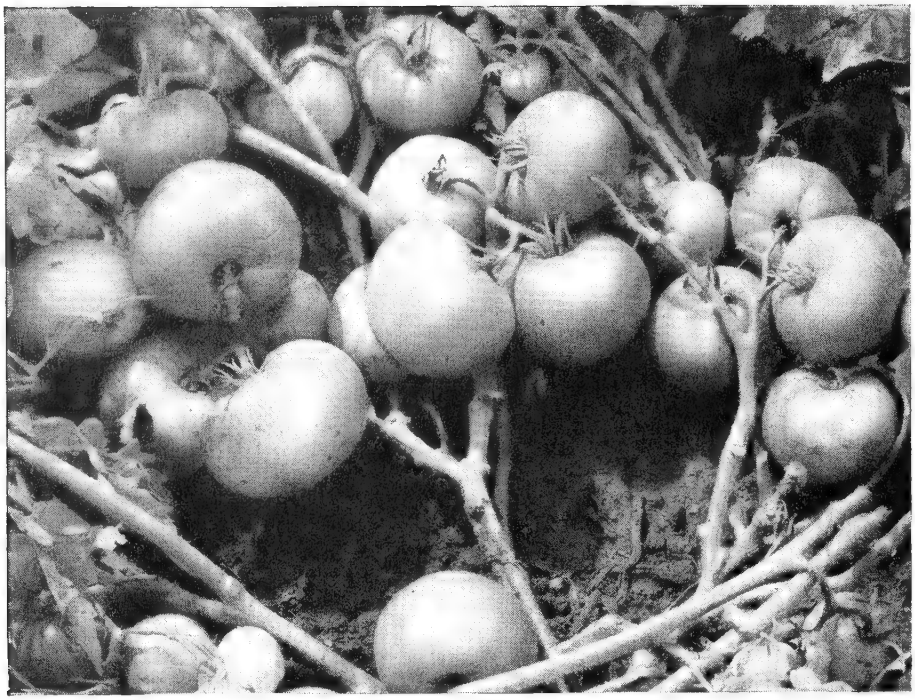
FALL AND WINTER (Trailing Vines)

Buttercup — A small-fruited variety belonging to the Hubbard group. Fruits are flattened, dark green, mottled with light green, have a medium-sized turban, adapted for fall and winter use. Flesh is free from stringiness, thick, deep yellow, dry and sweet. Its high quality makes it desirable for roadside markets.

Warren's Essex Hybrid — Fruits weigh from 10–20 lbs. 8 to 12″ from stem to blossom end and 12 to 16″ in diameter. A flattened, cylindrical turban shape, with a distinct button on the blossom end. Skin is hard, warted and orange-red in color. The flesh is deep orange, thick, dry and sweet. For fall markets.

Des Moines — Also known as Acorn and Table Queen. Fruits are dark green, pointed acorn shape, uniformly-ribbed, smooth, thin-shelled, 4 to 5″ in diameter and 6″ long. Flesh

★ Weighing 15–30 pounds, the *Blue Hubbard* is a standard variety for winter storage.



★ Among the many tomato varieties, *Pennheart* is an extra early variety with fruits generally smooth, deep red and good size. *Pennheart* is intended only for a first early crop.

is light yellow, smooth in texture and sweet. Especially delicious when baked in the half shell for individual servings.

Vermont Hubbard — A green Hubbard type with fruits 10–14″ in diameter, 12–16″ long, weighing 10 to 20 pounds. Shell is very hard, flesh exceptionally thick, deep orange, dry, fine-grained, excellent flavor. Stores well.

Blue Hubbard — The standard variety for winter storage. Fruits 20″ long, 10″ in diameter, weighing 15 to 30 lbs. with solid neck and blossom end. The shell is blue, hard, brittle, and medium-warted. Flesh is orange-yellow, thick, medium-dry and sweet.

Golden Cushaw — An exceedingly high quality, productive squash, highly desirable for home gardens, roadside stands and many markets. The fruits are golden russet or light tan in color with long, generally curved necks and a bulbous seed end. They average to weigh about 4 to 5 lbs. each. When mature, the flesh is a rich orange color, dry and sweet with only a small seed cavity in the bulbous end. The neck is solid. When green, the fruits can be used just as the summer bush varieties but with much more flavor. When fully matured and carefully handled and stored they can be kept all winter. Will not cross readily with pumpkins or other squashes.

Culture — Fall and Winter Squashes

One ounce of seed plants 20 hi ls — 4 lbs. per acre. Plant after danger of frost, 1″ deep in 8 by 8′ hills, 6 seeds per hill. Thin to 2 or 3 plants per hill. Keep down weeds and control leaf-feeding insects and the stalk borer.

TOMATO

Pennheart — An extra early variety developed by Dr. C. E. Myers of Pennsylvania State College and first grown commercially in 1943. The vine is dwarf or determinate, developing to only about 30″ in diameter. The plants should be started medium early and not subjected to any checks in growth before setting in the field. They then produce heavily over a short early period before standard vine varieties yield a commercial picking. Foliage is held well, giving considerable protection from sunscald. Fruits are generally smooth, flattened globe in shape, deep red in color, often with a green shoulder, and weigh 5 to 7 ozs.

This variety is intended to be useful only for a first early crop. Close planting — 18 x 30″ — produces a heavy yield for the area occupied before the standard vine varieties come into production; and after the early crop is harvested there is still time to produce some quick growing crop on the same land.

Bonny Best (Shirley) — Selected for earliness, vines somewhat susceptible to blight, medium size, fruit protection by foliage fair. Fruits are a flattened globe, 5–6 ozs., smooth, of deep red color, thick-walled, and mature rapidly.

Stokesdale — A highly productive, red-fruited variety in the John Baer season (73 days) and resistant to fusarium wilt. The vine is vigorous and leafy, but it fruits so heavily that some extra nitrogen must usually be supplied about the time the first fruits ripen to retain the foliage. The fruits are of medium size, 5 oz., globular, 5 to 6-celled and medium red. Crop short; available only in four oz. packages.

Pritchard — A second early variety developed by the USDA and noted for disease resistance. Fruits are large, smooth, globular, solid, with thick walls and small seed cavity, scarlet in color and self-topping. A good variety for market and home gardens and for canning. The plant is very prolific and vigorous in growth, affording excellent protection for the fruit from sun scalding.

Marglobe — Developed by the USDA and noted for its high yields and resistance to fusarium wilt. Plant is medium to large and affords good fruit protection. Fruit is medium to large, globe-shaped, bright red, smooth, thick-walled, good quality and borne in clusters of 4 or 5. Used extensively for homes, market and canning.

Rutgers — Developed by the New Jersey Experiment Station from a cross of J.T.D. and Marglobe. The vines are vigorous and rank growing under moist conditions. The fruit is deep scarlet, firm fleshed and of flattened globe shape, larger than Marglobe. For proper growth and fruiting, nitrogen applications must be withheld until after fruit setting; nitrogen can then be applied as a side-dressing.

Tomato Culture

One ounce of seed should produce 3000 plants, enough for ¾ acre unpruned or ½ acre staked and pruned. Sow in greenhouse early in March (7 to 9 weeks before planting). Transplant to 2 x 2″ or more to avoid crowding. Harden off and transplant to the field after danger of frost, about May 15 or earlier if protected. Set 2 x 4′ if to be staked and pruned or 3 to 3½ x 4′ if to be left on the ground.

TURNIP

Purple Top White Milan — An early variety for forcing or field culture. Tops are small and compact with strap leaves. Roots have purple top with white base, grow 3 to 4″ in diameter, deep but flat, white-fleshed, sweet and tender. For the early crop sow seed from April 1 to May 1; late crop July 15 to August 1.

Purple Top White Globe — Should be planted in late July to August 1, as it makes its best development in cool fall weather. The root is globular in shape, 3 to 4″ in diameter, purple above ground and white below. The flesh is crisp, white, fine-grained, sweet, mild and tender. Tops are dark green, lobed, large and erect.

Amber Globe — A yellow-fleshed variety for fall planting. Later maturing than Purple Top White Globe so should be planted correspondingly earlier. When grown in midsummer, flesh becomes bitter. Roots semi-globular, 5 to 6″ in diameter. Flesh pale yellow, fine-grained, tender and sweet.

(Also see Rutabaga varieties.)

Turnip Culture

As for all root crops, the seedbed should be deeply prepared and well fertilized. One ounce of seed will plant 300′ of row — 2 lbs. per acre. For early crop, seed as early as ground can be prepared, for late crop, in late July or in August or just in time to allow maturity before hard freezes. Sow ½″ deep in 12 to 18″ rows. Thin seedlings to 4 to 6″. Removals may be used for greens. For late crop, seed is sometimes broadcast and raked in lightly, using 2 to 4 lbs. per acre. For storage, leave roots in the ground until late fall, then harvest before a hard frost and store in a cool, moist cellar.

How to Obtain Eastern States Vegetable Seed

☆ **Ordering:** Please submit your order on the vegetable seed order form which is included as a part of this Cooperator — additional copies may be obtained from an Eastern States local representative, warehouse, or the West Springfield, Mass., office.

Orders may be submitted through a local representative, or warehouse, or direct to the West Springfield, Mass., office.

Shipment will be made or notice of inability to ship will be sent promptly. Early orders help to assure the varieties desired and delivery well in advance of planting time.

Delivery: Shipment will be made by parcel post or express at our option. Exceptions to this may be made by us; and some orders such as for warehouse stocks may be shipped in Eastern States feed cars. Shipment will be made as promptly after receipt of order as supplies and facilities permit.

Local Warehouse Service: Supplies of seed will be maintained at Eastern States regional warehouses and at warehouses of some local representatives. Better service can be rendered at less expense when members anticipate their needs and place orders well in advance of desired planting date.

Charges: Prices are subject to change without notice. Prices in effect at the West Springfield office on the postmarked date of your order will apply.

Prices include seed treatment, bags and transportation within Eastern States territory when method of shipment is at our option.

This year warehouse prices are the same as catalog prices.

Payment: Cash with the order or C.O.D.

Package Units: Seed is packaged in standard size units as listed only. Unless otherwise authorized we will ship each item in the largest standard size units available and invoice at the rate for its total weight. One variety may be ordered in smaller units to make a larger unit. The charge is an additional two cents per package when the amount is less than a pound and one cent a pound when over a pound. For example: 4 one-ounce packets of carrots may be obtained at the same price as a four-ounce packet plus two cents a packet, or eight cents for these smaller packets. Twenty-five pounds of beans may be obtained in five-pound packages for an additional 25 cents. Orders which specify certain size packages will be invoiced at the rate for those sizes. Varieties cannot be combined to obtain lower prices of larger units.

Warranty Clause

We know by test these seeds are of desirable inheritance and of high vitality and will produce favorably under normal conditions. Care and environment do so affect type and production that we give no warranty, express or implied, as to the crop produced and shall in no instance be liable for more than the amount actually paid for the seed.

Vegetables for a Family of Four

8000 square feet = 80′ × 100′

	Linear Feet	*No. of Plants*	*Production*	*Sq. Ft. Required*
Perennials				
Asparagus	75	50 crowns	50 lbs.	375
Rhubarb	20	6 hills	60 stalks	80
Greens				
Swiss Chard	10	20 plants	10 lbs.	20
Spinach	40 (2 crops)	—	25 lbs.	60
New Zealand Spinach	15	5 plants	12 lbs.	60
Beets	Thinning from crop grown for roots		15 lbs.	—
Turnip	Thinning from crop grown for roots		10 lbs.	—
Kale	15	—	10 lbs.	25
Cole Crops				
Cabbage — Early	15	10 plants	30 lbs.	30
Cabbage — Late	35	20 plants	80 lbs.	100
Cauliflower	50	30 plants	25 heads	125
Broccoli	50	25 plants	50 lbs.	150
Chinese Cabbage	25	20 plants	20 heads	50
Salad Crops				
Lettuce — Head	25	25 plants	20 heads	35
Lettuce — Leaf	25 (3 crops)	70 plants	15 lbs.	25
Endive	25	25 plants	12 lbs.	40
Parsley	10	15 plants	4 lbs.	15
Celery	50	100 plants	90 plants	150
Beans and Peas				
Peas	300	—	100 lbs.	900
Snap Beans — Bush	200	1000 plants	100 lbs.	600
Snap Beans — Pole	50	50 plants	60 lbs.	200
Lima Beans — Bush	200	600 plants	50 lbs.	600
Lima Beans — Pole	50	50 plants	25 lbs.	200
Root, Bulb and Tuber Crops				
Beets — Early	25	150 roots	20 lbs.	35
Beets — Late	100	400 roots	100 lbs.	150
Carrots — Early	25	150 roots	15 lbs.	35
Carrots — Late	100	500 roots	75 lbs.	125
Radish — In rows with other crops				
Rutabaga and Turnip	100	200 roots	100 lbs.	150
Parsnip and Salsify	100	300 roots	80 lbs.	150
Onion	100	350 bulbs	75 lbs.	150
Potatoes	400	400 hills	10 bu.	1000
Corn	400	550 stalks	600 ears	1000
Vine Crops				
Summer Squash	25	8 hills	30 fruits	100
Winter Squash — In corn rows		10 hills	30 fruits	—
Cucumbers	25	6 hills	25 lbs.	125
Muskmelon	70	12 hills	50 fruits	350
Watermelon	30	6 hills	10 fruits	240
Pumpkins — In corn rows		10 hills	25 fruits	—
Solanaceous Crops				
Tomatoes	150	75 plants	400 lbs.	500
Peppers	50	30 plants	150 fruits	125
Eggplants	25	12 plants	30 fruits	75

Price List of Eastern States Vegetable Seeds

One variety may be ordered in smaller units to make a larger unit — at an additional charge of 2¢ per package when less than a pound and 1¢ per pound when over a pound. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size.

Kind and Variety	*Days to Grow*	*Description*	*Price*				
Asparagus Seed — No seed treatment				Packet	4 oz.	1 lb.	5 lbs.
Mary Washington	3 yrs.	Large, green, rust resistant		.10	.60	1.75	7.00
Bean — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Bush Green Snap							
Stringless Valentine	48	Round pod, 6½", early	.10	.40	1.50	5.75	22.50
Bountiful	49	Flat pod, 6½", early	.10	.40	1.50	6.00	23.00
Stringless Green Pod	52	Round pod, 6", 2nd early	.10	.40	1.50	5.75	22.50
Stringless Tendergreen	52	Round pod, 6", 2nd early	.10	.40	1.50	6.25	24.00
Bush Wax Snap							
Pencil Pod Wax	50	Round curved pod, 6½", black seed	.10	.40	1.50	6.50	24.00
Brittle Wax	52	Round pod, 6", white seed	.10	.40	1.75	6.50	25.00
Sure Crop Wax	53	Flat pod, 6", black seed	.10	.40	1.50	6.00	23.00
Bush Shell or Field							
French's Horticultural	85	Carmine splashed, green shell 7"–8"	.10	.40	1.50	5.75	22.50
Maine Yellow Eye	90	Yellow eye, 4½" pod, semi-runner	.10	.40	1.25	4.50	18.00
Geneva Red Kidney	95	Red kidney, 5" pod, disease res't.	.10	.40	1.50	5.75	22.50
Lapin Marrow		Not Available This Year					
Bush Lima							
Fordhook	75	Large seeded potato type, 5" pod	.15	.40	1.50	6.00	23.50
Pole Lima							
King of Garden	85	Large seeded, 2nd early, 5" pod	.15	.40	1.50	5.75	22.50
Pole Snap							
Kentucky Wonder	65	Green, round pod, 9"	.10	.40	1.50	6.00	23.00
Edible Soybeans							
Giant Green	90	Large seeded, green	.10	.40	1.50	5.75	22.50
Bansei	105	Medium size, yellow	.10	.40	1.25	4.50	18.00
Willomi	105	Large seeded, yellow	.10	.40	1.50	5.75	22.50
Aoda	120	Large seeded, green	.10	.40	1.50	5.75	22.50
Beets — Treated with Arasan				Packet	4 oz.	1 lb.	5 lbs.
Crosby Early Wonder	58	Early Market, oval		.10	.70	2.25	9.00
Detroit	65	Late market, globe		.10	.70	2.25	9.00
Broccoli — Treated with Semesan or Arasan			Packet	½ oz.	4 oz.	1 lb.	5 lbs.
Early One	88	Green sprouting. Available in April	.10	.30	1.75	5.25	21.00
Calabrese Regular	95	Green Sprouting	.10	.20	.80	2.25	9.00
Cabbage — Treated with Semesan or Arasan			Packet	½ oz.	4 oz.	1 lb.	5 lbs.
Golden Acre Regular	70	Round, early, 3–3½ lbs.	.10	.30	1.75	5.25	21.00
Golden Acre Yel. Res't.	70	Round, early, 3–3½ lbs.			Crop Failure		
Marion Market	80	Oval, yellows res't., 5–7 lbs.	.10	.30	1.75	5.25	21.00
Penn State Ballhead	110	Round, flat top, 6–7 lbs.	.10	.35	2.00	6.50	28.00
Wisc. No. 8 Yel. Res't.	110	Round, flat top, yellows rest. 6–8 lbs.	.10	.35	2.00	6.00	24.00
Drumhead Savoy	90	Savoy, green flat, 6–7 lbs.					
Mammoth Rock Red	110	Smooth, red, oval, late		1 oz.			
Chihli (Chinese)	80	Tall celery type	.10	.30	1.00	3.00	—
Carrot — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	25 lbs.
Chantenay (Long)	70	Half long, strong top (For trial only)	.10	—	—	—	—	—
Chantenay, Red Cored	68	Short, tapering, early						
Nantes Long	70	Half long, cylindrical						
Imperator (Long Strain)	90	Long, deep red, smooth	.10	.35	1.00	3.50	14.00	60.00
Bunching	90	Long, small top, smooth						
Danvers (Supreme)	80	Half long, small top						
Hutchinson	100	Long, vigorous, high yielding						

One variety may be ordered in smaller units to make a larger unit — at an additional charge of 2¢ per package when less than a pound and 1¢ per pound when over a pound. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size.

Kind and Variety	*Days to Grow*	*Description*	*Price*				
Cauliflower — Treated with Semesan or Arasan			Packet	¼ oz.	1 oz.	4 oz.	1 lb.	5 lbs.
Danish Early Snowball	75	Sure-heading, early	.20	.75	2.00	7.00	25.00	100.00
Super Snowball	65	Deep head, for midseason						
Holland Erfurt	100	Main crop						
Celery — Treated with Arasan			Packet	½ oz.	1 oz.	4 oz.	1 lb.	
Green								
Fordhook Emperor	125	Short, thick, brittle	.10	.45	.75	2.50	7.50	
Tall Fordhook (Summer Pascal Type)	130	Tall, full heart						
Chard — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.		
Fordhook Giant	55	Dark green, moderately savoyed	.10	.25	.70	2.25		
Lucullus	55	Yellow green, savoyed						
Corn — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.	
Hybrid, Yellow								
Sugar and Gold	74	High quality, yellow and white kernels susceptible to bacterial wilt	.10	.50	2.00	8.50	30.00	
Early Golden 1.13	79	Excellent quality, 5½′ stalk, 7″ ear	Supply Exhausted					
Marcross 13.6	82	5′ stalk, 8″ ear, 12–14 rows	.10	.45	1.80	7.25	28.00	
Carmelcross 30.13	84	5½′ stalk, 8″ ear, 12–16 rows	.10	.45	1.80	7.25	28.00	
Golden Cross Bantam	98	Highest quality, 6½′ stalk, 8″ ear	.10	.40	1.75	6.75	26.00	
Hybrid, White								
Nar. Evergreen 14 x 13	100	High quality, 7½′ stalk, 8″ ear	.10	.50	2.00	8.50	30.00	
Open Pollinated, Yellow								
Golden Bantam	90	5½′ stalk, 6½″ ear, 8 rows	.10	.30	1.25	5.00	18.00	
Bantam Evergreen	104	7′ stalk, 7½″ ear, 14–18 rows	.10	.35	1.50	6.00	23.00	
Cucumber — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Pickling (Black Spine)								
Association Pickling	54	Small, for sweet pickle	.10	.30	.90	2.75	11.00	
Chicago Pickling	59	Large, for dill pickle	.10	.30	.90	2.75	11.00	
Slicing (White Spine)								
Straight 8	60	8″ x 2″, dark green, smooth	.10	.35	1.00	3.00	13.00	
A & C Special	70	10″ x 2½″, very dark green, smooth	.10	.35	.90	2.75	11.00	
Eggplant — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.		
New Hampshire Hybrid	66	Oval, large, early	.10	.75	2.25	7.50		
Black Beauty	80	Oval, large, midseason						
Endive — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.		
Full Heart Batavian	90	Broad plain leaf, yellow green	.10	.25	.75	2.00		
Green Curled Ruffec	95	Broad cut leaf, bright green						
Kale — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.		
Blue-Scotch	56	Dwarf, fine curled, semi-hardy	.10	.35	1.50	4.50		
Blue-Green Siberian	64	Dwarf, hardy, thick leaf	.10	.30	1.00	3.50		
Lettuce — Treated with Spergon			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Black Seeded Simpson	65	Loose leaf — for home gardens	.10	.30	.90	2.50	10.00	
White Boston	70	Butterhead — for local markets	.10	.30	.90	2.50	10.00	
New York No. 12	78	Iceberg type — for 1st early crop	.10	.45	1.25	3.75	15.00	
Imperial 44	78	Iceberg type — for rich soils	.10	.45	1.25	3.75	15.00	
Imperial 847	80	Iceberg type — for main crop	.10	.45	1.25	3.75	15.00	
Great Lakes	83	Semi-Iceberg type — for summer and fall crops	.10	.75	2.25	6.50	26.00	

One variety may be ordered in smaller units to make a larger unit — at an additional charge of 2¢ per package when less than a pound and 1¢ per pound when over a pound. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size.

Kind and Variety	*Days to Grow*	*Description*	*Price*				
Melon — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Muskmelon — Salmon Flesh							
Emerald Gem	85	2–3 lbs., for home garden or market	.10	.30	.90	2.50	10.00
Honey Rock	88	4–5 lbs., for home garden or market	.10	.30	.90	2.50	10.00
Hale's Best 112	90	4–5 lbs., good shipper, use in New England	.10	.40	1.20	3.00	14.00
Hale's Best 36	90	5–5½ lbs., good shipper, use in southern Pennsylvania	.10	.30	.90	2.50	10.00
Hearts of Gold	94	4–5 lbs., for home garden or market	.10	.30	.90	2.50	10.00
Bender's Surprise	95	7–8 lbs., for home garden, market or short shipments	.10	.30	.90	2.50	10.00
Watermelon — Red Flesh, Green Rind			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
White Mountain	70	3–5 lbs. for home garden in cool areas	.10	.30	.80	2.25	9.00
Northern Sweet	80	8–10 lbs. for local markets, prolific					
Cole's Early	85	20 lbs. for home garden, high quality					
Kleckley's Sweet	100	30 lbs. for home garden and local markets					
Onion Seed — No treatment			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Yellow							
Early Yellow Globe	125	Medium size, solid, mild, stores well	.10	.75	2.25	6.50	28.00
Ebenezer	133	Deep flat, used largely for sets	.10	.75	2.25	6.50	27.00
Yellow Globe Danvers	140	Medium large, round, firm, for storage	.10	.75	2.25	6.50	27.00
Utah Valencia	125	For transplants, large, sweet	.10	.75	2.25	8.00	32.00
White							
Silverskin Wh. Portugal	150	All purpose, dependable, bulbs deep-flat, hard, mild	.10	.75	2.25	8.00	32.00
Parsley — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Paramount	120	Long stout stem, dark green, triple curled	.10	.25	.60	1.75	7.50
Parsnip — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.
Model	150	Medium long, tapered, smooth	.10	.35	1.00	2.50	10.00
Hollow Crown	150	Long, tapered, smooth					
Pea — Treated with Spergon			Packet	1 lb.	5 lbs.	25 lbs.	100 lbs.
Wrinkled Seed		*Vine* *Pod* *Suggested Use*					
World's Record	58	34″ 4″ pointed Early market	.20	.35	1.50	6.25	22.00
Thomas Laxton	62	36″ 3¾″ blunt Home garden and freezing					
Laxton's Progress	62	18″ 4½″ pointed Midseason market					
Little Marvel	63	20″ 3″ blunt Home garden					
Hundredfold	64	24″ 4¼″ pointed Midseason market					
Gilbo (Obtainable at warehouses only)	68	26″ 5″ pointed Late market					
Alderman (Dark Telephone)	72	60″ 5″ pointed Late market					
Edible Pod							
Dwarf White Sugar	50	28″ 3″ narrow, thin					
Mammoth Melting Sugar	72	60″ 4″ broad, fleshy					
Pepper — Treated with Arasan			Packet	½ oz.	1 oz.	4 oz.	1 lb.
Sweet							
Early Giant	62	Dwarf, short, bullnose fruit	.10	.40	.75	2.25	6.50
Italian Sweet	62	Long, pointed, thick flesh					
California Wonder	80	Tall, bullnose, thick flesh					
World Beater	75	Tall, thick flesh, long, bullnose					
Hot							
Long Red Cayenne	75	Long, slender, very hot					

One variety may be ordered in smaller units to make a larger unit — at an additional charge of 2¢ per package when less than a pound and 1¢ per pound when over a pound. Varieties cannot be combined to obtain lower prices of larger units.

Orders which specify a particular size of package will take the rate of that size.

Kind and Variety	*Days to Grow*	*Description*	*Price*				
Pumpkin — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	25 lbs.
New England Pie	110	6–8 lbs. yellow, round	.10	.20	.60	1.75	6.00	26.00
Connecticut Field	120	15–25 lbs. yellow, flat round						
Radish — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Early Scarlet Globe	24	Oval, small top, scarlet, market type	.10	.25	.60	1.75	7.00	
Sparkler White Tip	26	Round, dull scarlet, 2-color skin						
White Icicle	27	5–6″, slender, smooth, mild						
Crimson Giant	28	Large, globe, crimson						
Rutabaga — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Macomber	80	Root ovate, rose-colored on top, flesh white	.10	.25	.60	1.75	7.00	
L. I. Neckless Purple Top	85	Root obovate, purple on top, flesh yellow	.10	.25	.60	1.75	8.00	
Salsify — Treated with Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Mammoth Sandwich Island	270	Roots 8″ long, 1″ thick, tapering, smooth, dull white	.10	.30	.90	3.00	12.00	
Spinach — Treated with Arasan			Packet	4 oz.	1 lb.	5 lbs.	25 lbs.	
Dark Green Bloomsdale	38	Heavy thick leaf, early bolting, sow thin in frequent succession	.10	.25	.75	3.50	13.00	
Long Standing Bloomsdale	42	For 2nd early and main crop						
Virginia Blight Res't. Savoy	38	Fall cutting or overwintering						
Old Dominion	210	For overwintering, yellows res't.						
Summer Savoy	48	For summer crop	Acceptable seed not available					
New Zealand — No seed treatment	75	Slow growing, long period harvest	.10	.90	3.00	12.00		
Squash — Treated with Mercuric Bichloride and Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Summer — Bush								
Early Prolific Straight Neck	50	Lemon yellow, smooth	.10	.30	.80	2.25	8.00	
Long Cocozelle	55	Striped green, cylindrical	.10	.30	.80	2.25	8.00	
Fall and Winter — Trailing Vines								
Warren's Essex Hybrid	95	Red turban, 10–20 lbs.	.10	.30	.90	2.50	10.00	
Buttercup	90	Turban, mottled green, solid, 4 lbs.	.10	.40	1.25	3.50	17.50	
Des Moines	100	Green acorn, 3–5 lbs.	.10	.30	.90	2.50	10.00	
Vermont Hubbard	110	Green, warted, 10–20 lbs.	.10	.30	.90	2.50	10.00	
Blue Hubbard	110	Blue warted, 15–30 lbs.	.10	.30	.90	2.50	10.00	
Golden Cushaw	110	Golden Bulbous crookneck, 4–6 lbs.	.10	.30	.90	2.50	10.00	
Tomato — Treated with Arasan			Packet	½ oz.	1 oz.	4 oz.	1 lb.	
Pennheart	60	Dwarf vine, deep red, solid, for first early crop only	.10	.45	.75	2.25	7.00	
Bonny Best (Shirley Strain)	68	Flattened globe, deep red, thick walled						
Stokesdale	73	Globular, medium red, vigorous, wilt res't.						
Pritchard	75	Large, globular, scarlet, solid, disease res't.						
Marglobe	80	Medium to large, globular, bright red, wilt res't.						
Rutgers	90	Vigorous, large, flattened globe, deep scarlet, firm						
Turnip — Treated with Semesan or Arasan			Packet	1 oz.	4 oz.	1 lb.	5 lbs.	
Purple Top White Milan	42	Top small, root flat, flesh white	.10	.15	.35	1.25	5.00	
Purple Top White Globe	55	Top large, root globular, white flesh						
Amber Globe	60	Top large, root semi-globular, flesh yellow						

Also see Rutabaga

Vegetable Fertilizers for 1945

by E. K. Walrath

Mr. Walrath is a member of Eastern States Fertilizer Service staff.

I. Fertilizers Authorized by The War Food Administration and to Grades Selected by Eastern States

The manufacture and distribution of mixed fertilizer is limited to these approved ratios and minimum grades or multiples except as noted. These and the grades selected by Eastern States are given in Tables 1 and 2.

Table 1

NEW ENGLAND

E.S. Grades	*Approved Ratios*	*W.F.A. Minimum Grades*
0-20-20	0-1-1	0-14-14
0-10-20 with borax	0-1-2	0-10-20
10-10-10	1-1-1	7-7-7
5-10-5 *	1-2-1	5-10-5 *
5-10-10 8-16-16 8-16-16 L.C.S.	1-2-2	5-10-10
8-24-8	1-3-1	4-12-4
—	1-3-2	3-12-6
5-15-20	1-3-4	4-12-16
8-12-16 **	1-1½-2	5-7-10 **
8-12-20 **	1-1½-2½	6-9-15 **
6-18-18 ***	1-3-3	4-12-12 ***
8-4-8 *	2-1-2	6-3-6 *
5-5-15 *	1-1-3	5-5-15 *
—	5-3-5	5-3-5 *
—	1-2½-0	4-10-0 *
—	5-8-7	5-8-7 *

* The 5-10-5 is the Victory Garden fertilizer for food production. Multiples of the 5-8-7 or 5-3-5 not permitted. The 2-1-2 ratio is for tobacco only in Connecticut, Massachusetts, New Hampshire and Vermont; the 1-1-3 for tobacco only in Massachusetts and Connecticut; 4-10-0 for tobacco plant beds only in Connecticut and Mass.

** Maine only.

*** New Hampshire only.

(All other grades can be used in all states).

All customary fertilizer materials are authorized for distribution for direct use or home mixing. These materials are listed for Eastern States distribution: *Ammonium Nitrate*, *Uramon*, *Nitrate of Soda*, *Superphosphate* 20% and 47%, *Muriate* and *Sulphate of Potash*, *Granular Borax;* for New England only, *Pulverized Cyanamid* for weed control and *Magnesium* and *Manganese Sulphate*.

Table 2

MIDDLE ATLANTIC

E.S. Grades	*Approved Ratios*	*W.F.A. Minimum Grades*
0-20-20 0-19-19 with borax	0-1-1	0-12-12
0-24-12	0-2-1	0-14-7
10-10-10	1-1-1	7-7-7
5-10-5 *	1-2-1	5-10-5 *
8-16-16	1-2-2	5-10-10
—	1-2-3	4-8-12
8-24-8	1-3-1	4-12-4
—	1-3-2	4-12-8
6-18-18 **	1-3-3	4-12-12 **
5-15-20	1-3-4	3-9-12
4-12-20 *	1-3-5	3-9-15
5-20-10	1-4-2	3-12-6
—	1-6-6	2-12-12 **
—	3-4-3	6-8-6 **
—	1-0-1	10-0-10 **

* 5-10-5 is Victory Garden fertilizer for food production. Eastern States 4-12-20 for Pennsylvania tobacco.

** 6-18-18 for Pennsylvania only. Ratios 1-6-6, 3-4-3, 1-0-1, for Delaware and Maryland only. All other grades can be used in all states.

The 5-10-5 is the Victory Garden fertilizer recommended for non-member patrons. Members or patrons may, however, use any approved grade on Victory or farm gardens.

II. What Fertilizer and How Much Per Acre Can be Used?

The War Food Administration Order has been revised so that the authorized grades may be applied in amounts up to the maximum rates recommended by the state agricultural experiment station OR the rate customarily used in the area, whichever is greater.

The state recommendations have been published for the New England states and copies can be secured from the extension services. There are minor variations between the maximum rates recommended by the different states. Tables 3, 4 and 5 are condensed lists of the grades and amounts of Eastern States fertilizers that meet or are suggested substitutes

Table 3

SUGGESTED GRADES AND MAXIMUM RATE

Bags per Acre *

Crops	*Connecticut, Massachusetts and Rhode Island*
Asparagus	8-16-16 @ 12½
Beans	8-24-8 @ 8
Beets	8-16-16 @ 12½
(Broccoli, Cauliflower, Cabbage)	8-16-16 @ 12½
Celery	8-16-16 @ 16
Corn, Sweet	8-24-8 @ 8
Cucumbers, Melons	8-16-16 @ 9
Lettuce	8-24-8 @ 12½
Onions	10-10-10 @ 10
Peas	8-16-16 @ 9
Peppers	8-24-8 @ 5
Potatoes	8-16-16 @ 12½
Squash	8-16-16 @ 9
Spinach	10-10-10 @ 14
Tomatoes	8-16-16 @ 9
Other Vegetables and Victory Garden	5-10-5 @ 20
Cover Crops — Grasses	10-10-10 @ 6
— Legumes	0-20-20 @ 6
— Mixed	5-15-20 @ 6 8-16-16 @ 5

* With manure reduce the quantity of fertilizer.

Table 4

SUGGESTED GRADES AND MAXIMUM RATE

Bags per Acre *

Crops	*Maine, New Hampshire and Vermont*
Beans, Peas	8-16-16 @ 6
Corn, Sweet	8-24-8 @ 6
Potatoes	8-16-16 @ 12½
Potatoes — Maine only	8-12-16 @ 14
Potatoes — Maine only	8-12-20 @ 11½
Potatoes — New Hampshire only	6-18-18 @ 13½
Other Vegetables — Leafy Crops	8-16-16 @ 12½ **
Other Vegetables — Root Crops	8-16-16 @ 12½
Other Crops	8-24-8 @ 10
Victory Garden	5-10-5 @ 20
Cover Crops — Grasses	10-10-10 @ 5
— Legumes	0-20-20 @ 6
— Mixed	5-15-20 @ 5 8-16-16 @ 4

* With manure reduce the quantity of fertilizer.

** Additional sidedressing of nitrogen is necessary.

for the official lists. For the Middle Atlantic area, these are the same as for last spring, as the 1945 recommendations have not been received. Most of the state recommendations give an optional choice of grades. These tables, however, list only one grade that Eastern States is most likely to have for the crop. These maximum rates may not necessarily be the most profitable, but they represent the rate considered most practical for the less favorable conditions. Customary practices may, however, permit larger applications to be used.

III. How to Make the Supply of Fertilizer Give the Greatest Production

1. Get the most from the manure available.
   a. Conserve the liquid and prevent the heating.
   b. Reinforce the manure with superphosphate.
   c. Spread thinly over more acres.
   d. Use poultry manure for leafy crops and topdressing cover crops.
2. Make certain soils and plants have enough calcium.
   a. Calcium in lime is both a soil conditioner *AND* plant nutrient.
   b. Soils can have a desirable pH reading and yet be low in calcium. Low calcium decreases the efficiency of nitrogen and phosphorus fertilizers. If asparagus, beets, cauliflower, spinach or legume cover crops do not grow well, get your soils — top and subsoil — tested for calcium.
   c. Small amounts of limestone — 300 to 500 pounds — drilled in before seeding, will often furnish enough calcium as a nutrient for the crops if the supply of lime or labor does not permit the usual broadcast application.
3. Put the fertilizer where the plants can get it.
   a. Get the plants off to a good start with some fertilizer in bands along the row in planting or use a starter solution where earliness is important. For narrow row, leafy crops such as spinach, early cabbage and beets, broadcast applications may be more practical.
   b. Except for potatoes, when more than 400 to 500 pounds of fertilizer is to be used by band placement along the row, drill in the balance deeply.
   c. In dry seasons the plowing down of part of the fertilizer is a method that is showing much promise and is recommended for trial.
4. Keep a crop on the land all the time to conserve Nitrogen.
   a. It is decaying organic matter or live plant roots that hold nitrate nitrogen against losses by leaching. Domestic rye grass seeded at the last cultivation or before October will develop a very heavy root system and will conserve the nitrogen supply and prevent erosion.
   b. If the vegetable crop was fertilized only in the row, provision for fertilizing the cover crop between the rows should be made.
5. Chemical fertilizer and organic matter are the winning team.
   a. Applications of chemical fertilizer are most effective only when there is a good supply of organic matter from stable manure, green manure or sods in rotation.
   b. The beneficial soil organisms must have plenty of organic matter, nutrients including lime, and air to do their work.
6. See that there is sufficient boron.
   a. Cracked stem of celery, brown rot of cauliflower, and heart rot of turnips, indicate the need for boron.
   b. Eastern States 0–10–20 with 4% borax for New England and 0–19–19 with 5% borax for Pennsylvania, Maryland and Delaware are mixtures to correct boron deficiency.
   c. These mixtures with borax are recommended primarily for cover crops and legume sods that precede the vegetables. For direct use on vegetables, determine the rate per acre of borax for *each* crop. The 0–10–20 contains four pounds of borax per bag; the 0–19–19, five pounds of borax per bag. These mixtures *must not* be used in the row but should be thoroughly mixed with the soil well before planting.

Table 5

SUGGESTED GRADES AND MAXIMUM RATE

Bags per Acre *

Crop	*Delaware and Maryland*	*Pennsylvania*
Beans, Peas	** 5-20-10 @ 6	* 5-20-10 @ 6
Beets, Carrots, Onions	5-15-20 @ 6	8-16-16 @ 8
Corn, Sweet	5-20-10 @ 5	5-20-10 @ 5
Tomatoes	8-16-16 @ 8	5-20-10 @ 8
Potatoes, Sweet	5-15-20 @ 8	5-15-20 @ 6
Potatoes, White Early	10-10-10 @ 7	8-16-16 @ 8
Potatoes, White Late	8-16-16 @ 8	8-16-16 @ 6 6-18-18 @ 6 ***
Victory Garden	5-10-5 @ 20	5-10-5 @ 20
Other Vegetables — Leafy	10-10-10 @ 6	5-20-10 @ 8
— Root	5-15-20 @ 6	8-16-16 @ 8
— Vine	5-15-20 @ 8	5-20-10 @ 8
Cover Crops — Grasses	10-10-10 @ 4	10-10-10 @ 3
— Legumes	5-20-10 @ 3	0-20-20 @ 2½
— Mixed	8-16-16 @ 4	5-20-10 @ 3

* Based on Eastern States 1944 Recommendations and for use without manure. With liberal use of manure, reduce the quantity of fertilizer.

** The 8-24-8 may well be substituted for the 5-20-10 for any crop where a ratio with more nitrogen to phosphorus and potash is wanted. Use the 8-24-8 at lower rates where manure has been liberally used.

*** Use where excessive vine growth is a problem.

We Take Pen In Hand

Dear Editor:

IT'S RATHER HARD to understand why certain people think that tillers of our farming land are sadly on the blink. They say the farmer's day is spent in unrelenting toil and claim he doesn't make a cent by stirring up the soil. They seem to think no profit comes from plowing hill and dale, and every time the sprayer hums it's simply costing kale, and in their dreams they plainly sense the poor, old, jaded wrecks; the knock-kneed, sunburned, frowsy gents who get it in the necks.

It's really hard to figure out, with backs against the wall, how all these farmers round about survive the life at all. You'd think, with all their handicaps, they'd chuck the farming job and shave the whiskers from their maps and join the starving mob.

But listen, now, to what I say, and every word is true. You'll find the hayseed farmer Jay will pass a strict review. He never shirks at duty's call, he's game and on the square. In benefactions, great and small, you'll always find him there. Throughout our land the farming class, if taken as a whole, can show it's able to amass a very nifty roll. Their county, state and income tax has steadily increased and though at times it strains their backs, they pay and grumble least. They stage no ostentatious show. They crave no wild acclaim. The thing they chiefly care to know is how to play the game.

They send their sons and daughters, too, to colleges galore that they may learn just what to do to harvest more and more. And now, to sum the whole thing up and tell it as it is, the farmer sips the brimming cup and what's in it is his. He meets the entire blooming world and plays his cards to win. When sympathy at him is hurled, he springs his well-known grin.

So do not feel extremely sad about the farmer's fare. As sure as fate he's always had his full and festive share, and though he seems as green as grass to rich and poor alike, you'll have to step upon the gas to pass him on the pike. Perhaps right now you'd like to hear just how the farmers plan to drive around year after year aboard a new sedan.

Well, here's the secret: all they need to guarantee success is knowing where to buy their seed, not doing it by guess. They make their early estimates of what they'll have to buy, then hustle down to EASTERN STATES to get their seed supply.

Those seeds will grow in mud or sand and when the season stops they have to hire some extra land on which to pile the crops. Now, if perchance, you think I lie, in manner quite remiss, ask Mr. Hinshaw, he'll supply a bigger one than this. Now, Brother, are you wide awake? or one who hesitates? You'll find you're making no mistake by knowing EASTERN STATES.

— *Nathan Marshall Southwick, Leicester, Massachusetts*

☆ **PLEASE SEND ME** one copy of the recipe book, "Food, As We Like It" . . . I have a copy and think it is an unusually fine collection for the everyday homemaker. I want to give it as a present. — *Mrs. Alden Ballard, Milton, Vermont.*

☆ **I NOTE** in your November issue of the COOPERATOR that six of the 14 Star Gardeners selected to attend the Star Gardeners' Institute, were 4-H garden club members from Massachusetts. One of the alternates was also a Massachusetts 4-H garden club member. This speaks very well of our Massachusetts 4-H garden club members and I hope that next year we will have more competing for this honor of Star Gardeners. You are doing a fine piece of work in inviting these young people in to your Star Gardeners' Institute and I am sure it means a lot to these young people to receive this honor. — *Earle H. Nodine, assistant State Club Leader, Amherst, Massachusetts.*

Bert Wood of Concord, New Hampshire, who grows a good Eastern States garden annually, has built this attractive vegetable bin and canned goods storage cabinet in his basement. He has applied some Yankee ingenuity about air flow temperature control and some of the finer points of storage. Anyway, he has what a lot of husbands have told their wives they were some day going to build — but it's hats off to Bert Wood. He's built it!

SHOP TALK AMONG Cooperatives

FINANCIAL STABILITY of cooperatives is attested in the recent Farm Credit Administration report, just distributed, which discloses that 13 banks for cooperatives have loaned $1,424,808,263, with losses estimated at 19/100 of one percent. The report also indicated a substantial increase in loans to cooperatives, the 1943 total, $398,581,320, as compared with $252,379,499 for 1942. Farm Credit Administration says the increase in loans to cooperatives during the past few years has been largely due to the need for funds to process and market increased volume of fruits, fibers and oil produced under the wartime production program. A total of 1562 cooperatives, with a total estimated membership of 1,158,525 farmers, participate in this banking service.

LEGAL STATUS of cooperatives in establishing the same financial protection guaranteed to individual producers under a state's licensing and bonding laws was definitely given a solid foundation by the Court of Errors and Appeals of the New Jersey Supreme Court. In the action which resulted in bringing a precedent to the status of cooperatives, the farmers organization had filed a claim against a certain company for default in payment. The bonding company involved had contended that the cooperative was not entitled to the protection of the licensing and bonding laws because it was not an individual producer. The Court ruled that a cooperative, in this instance, is a producer and is, therefore, protected by the same laws safeguarding individuals against loss.

POSTWAR MARKETS of gigantic proportions will be found in a survey recently completed by the Dairymen's League through its New York state territory. The League covered 28,000 dairy-farm families who have reported savings up to $91,000,000 available for purchasing necessities after the war.

The potential market for products of industry among these League members includes 20,000 new automobiles, trucks and tractors totalling $21,433,000, and much automotive repair and maintenance parts amounting to $1,880,000. Practically every type of household convenience and necessity was listed by some farm family in this tabulation.

"FARMER SELF-HELP through cooperation is a cornerstone of the national agricultural policy," Quentin Reynolds, Eastern States general manager, told the Boston Conference on Distribution at its annual session. A farmer purchasing cooperative, said Mr. Reynolds, is not a principal buying to profit from resale but an agent buying for members and patrons who profit from the value-in-use. Mentioning the activity of interests seeking taxes for farmer-cooperatives, Mr. Reynolds commented:

"Unfortunately, on the apparent assumption that destroying farmer cooperation is an important means of correcting grossly inequitable and bad corporation tax laws, hundreds of thousands of dollars are being demanded from tax-ridden corporations to further that end. Fortunately, a great many executives in banking, transportation, and industry know the constructive place farmer cooperatives fill in the economy and the result of this demonstration will rest upon whether or not reason and good judgment are going to dominate the economic destiny of the nation. That reason and good judgment do prevail is the concern all responsible citizens share with the farmers."

FROZEN FOOD PLANTS furnishing a locker service now total 5282 according to a recent count made by extension services in the 48 states. Last year alone the increase was 723, while in the past seven years the total was quadrupled. The state of Iowa leads with 580 and Minnesota is second with 470.

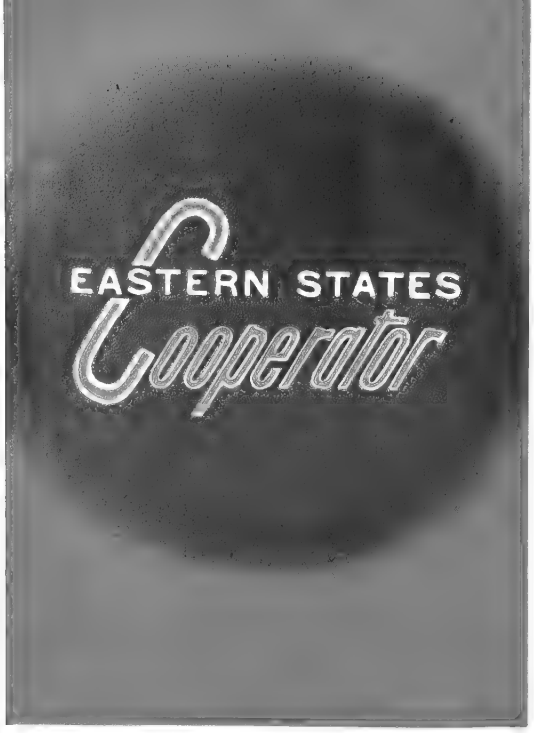
The northeastern farm states are far behind those of the middle and far West. In Eastern States' territory, New England has a total of 63, distributed as follows: Massachusetts 10, Connecticut 15, Rhode Island 2, New Hampshire 7, Vermont 28 and Maine 1. In the Middle Atlantic area, Delaware has five, Maryland 14 and Pennsylvania 75.

RESPONSIBILITY of a director of a cooperative and of the cooperative organization was well explained by C. E. Myers, president of Southern States Richmond Service at Sudley, Virginia, in an article written for *Cooperative Digest*. Said Mr. Myers:

"A director in a cooperative business represents patrons, whereas a director in a private business represents dollars. There is a real difference. The fact that patrons own and legally control a cooperative has important implications which are quite foreign to the thinking of many capable business men and farmers not educated to cooperative principles.

The purpose of the cooperative is service at a reasonable and fair cost, whereas the purpose of a private business is service at a profit on the dollars invested. The owner of stock in a cooperative gets only rent or interest on his property, while the owner of stock in a private business gets a profit according to the number of dollars invested.

In a successful cooperative, the patron makes a saving according to his use of the cooperative service.



THIS MAGAZINE is published monthly by the Eastern States Farmers' Exchange, headquarters: West Springfield, Mass. It is distributed free to members of this cooperative purchasing association. The purpose of the *Eastern States Cooperator* is to keep members informed about the progress of their organization — to help make better farming easier to accomplish by having up-to-date information available regularly. For anyone living outside Eastern States territory and those within the territory but not able to participate in the association's purchasing program, there is a subscription price of $1.00 a year.

There are 100,000 members and patrons in the Eastern States Farmers' Exchange located in New England, Pennsylvania, Delaware, and Maryland. The members are the owners of the Exchange, which serves as the purchasing department of their farms. They control its operation through their annual meeting which every member has the right to attend. Each member has one vote.

Members elect the Exchange's board of directors at the annual meeting. Through its executive committee, the board of directors carries out its reponsibilities to the membership. The management, responsible to the executive committee, selects and purchases the commodities handled by the association.

Eastern States commodities are processed in the Exchange's own plants — shipped in carloads — usually delivered to members from the car door — and paid for on a cash basis; factors that enable the Exchange's local representatives to serve 1000 communities economically.

Vol. 21 ***No. 1***

$1600 AN ACRE

A VEGETABLE garden not only furnishes a family with a continuous supply of fresh vegetables and supplies a surplus for canning or storing for the winter months, but it is also a source of knowledge, happiness and security.

At retail prices, a variety of vegetables can become the equivalent of a crop worth as much as $1600 an acre.

A family with a variety of fresh vegetables on hand eats more, enjoys them more and does not have to shop around, especially when prices are high. Fresh vegetables supply the family with the highest quality in food value.

Many vegetables may be served from the home garden that are not commonly found on the market.

A family's problems in caring for a garden are mutual. When any group speaks a common language they are happier. They understand and practice cooperation in one more phase of life.

HOME TALENT

ONE THING that can't be escaped in a cooperative is the fact that the cooperative is just what the members make it. So often, however, members expect to get out of their association something they never put into it.

The Elwood Bicknells of Oxford, Pennsylvania, are the kind who put a lot in their cooperative . . . and encourage neighbors to do so, too. He's the local Eastern States representative. One evening the Bicknells fixed up a buffet supper and invited six couples who farm in their neighborhood to join them for a pow-wow on Eastern States affairs.

In the Bicknell living room the folks sat around in a big circle and took turns reading and discussing the topics in the little booklet, "A Story of Organized Thrift." They were all Eastern States members before this little get-together — but after it they were much better informed about their cooperative. You could properly say they were "better" members after this meeting.

Wherever Eastern States members take it upon themselves to develop better understanding of their cooperative's affairs, there you will find members who are bound to get more good out of their organization. They're doing things to make Eastern States better.

TAXES, TAXES

THE STORY that cooperatives now have a *special legal privilege* in escaping income taxes can be answered very bluntly.

So does every business!

There's nothing "special" or "privileged" about it. If any business man or corporation wants to forego paying income tax, the way to do it is simple — just share among all the customers all the money left over after paying the operating costs of the business. That's what cooperatives do — and there's no law that says other businesses can't do likewise.

And if they did, they'd have no profit income to be taxed. Every business — cooperative or otherwise — has the same status before the law today insofar as taxing income profits is concerned.

The reason businesses other than cooperatives do not flock to this privilege is obvious. People own a profit business to make profits in dealings with other people who do not own this business. People own cooperatives to serve themselves and they can't make a profit dealing with themselves.

What the law says is that if farmers operate a true cooperative it will be non-profit.

Anybody's business, if truly non-profit, is not paying income taxes.

Let's help folks keep these points straight.

PUBLIC RELATIONS

EVERY member of Eastern States can help strengthen this cooperative service by appointing all members of the family along with himself on the "Eastern States local committee for public relations." Every member of a farm cooperative should

thoroughly understand the organization and lose no opportunity to pass on information about it to farm neighbors and townspeople.

Your Eastern States director of public relations believes that the field is so broad and there is so much to be done that all employees and members should accept a responsibility for public relations work. Every person associated in any way with Eastern States is constantly making impressions. By giving some thought and attention to the matter, those impressions can all be favorable. Cooperatives are judged at least in part by the words and actions of the people who are a part of them.

STARTED PLANTS

You can perform a real service to yourself and others in your community by encouraging garden plant starters to use seed of the Eastern States selected varieties. Plant starting is a specialty line and hundreds of home gardeners will be dependent on the strains and varieties which one plant starter selects. The plant starter and all who buy from him will benefit when his plants are backed by the quality of Eastern States strains and extreme care in selection of stocks for distribution.

FROM BOTH ENDS

"It is in reduction in the cost of production supplies and distribution that farmer cooperatives can and will, I believe, render yeoman service in the postwar period," John H. Davis, executive secretary of the National Council of Farmer Cooperatives, told his listeners at the Third New England War Conference. "Through their cooperatives, farmers reduce their cost of production, and of marketing — thus freeing purchasing power for the other things which industry produces. Through their cooperatives, farmers foster better grading and standardization of products, better varieties, improved storage facilities, and reduced costs and increased values to the ultimate buyer. In brief, cooperatives have narrowed distribution margins from both ends — thus making both the producer's and consumer's dollars go farther."

WELL-FED SOIL

Malnutrition has become evident on a national scale through physical rejection by local draft boards for military service. Soil fertility plays an important part in physical fitness of people.

Very recently you have noted references which show an increased concern on the part of those who make a study of human nutrition over the nutrient contents of the vegetables we eat. For instance, it is evident that there is spinach and spinach; that spinach with a low content of calcium, grown on calcium-deficient soils, not only is not particularly good for Junior but may actually reduce his body's reserve of that nutrient which this particular crop supposedly supplies. Everyone who plants a vegetable garden will do well to have conspicuously posted in the kitchen this statement, "Food is fabricated soil fertility." Well-fed soil will not only produce larger crops for the labor and materials invested, but those crops will also very likely be much more nutritious and help the family to maintain physical vigor and mental alertness.

KENNETH HINSHAW
Editor
WALTER ELLIS
Associate Editor

HOMEMAKER'S NOTEBOOK

Edited by
Ida Fisher

CAREFUL advance planning is the most important fundamental rule in building a vegetable garden which will produce a wealth of garden crops with a minimum of space and labor. When gardeners know the kinds and varieties of vegetables desired by the family and make a blueprint for the full summer's operation, production will sky-rocket and labor will fall immeasurably.

When carrot seed is planted, sometimes it is advisable to mix five to 10 percent of lettuce seed with it. The lettuce preferably should be a loose-leaf variety which grows quickly, such as Black Seeded Simpson. Lettuce comes up in about five days, marking the rows so that the soil may be stirred up. It also prevents the soil from packing, particularly if it is heavy, so that the carrots can come through about two weeks later. When the lettuce plants are about 1½ inches high, they may be transplanted to another part of the garden. A few lettuce plants may be left for another week or two until they are between two or three inches in height and then transplanted. Those which were transplanted first will mature and be harvested by the time the larger plants, which were transplanted later, will be ready to eat. This practice takes advantage of the set-back which occurs in transplanting larger plants.

Dill or radish seed may also be mixed sparingly with carrot seed. Dill grows well along with carrots

PLAN OF A SMALL FARM GARDEN

Including Intercrops and Succession Crops (45 x 50 feet)

Distance between rows		
1′	Asparagus — Mary Washington	
3′	Pole Lima — King of Garden	Inter crop with lettuce
3′	Sweet Corn — Marcross	Inter crop with spinach follow with summer squash
3′	Sweet Corn — Golden Cross Bantam	Inter crop with radishes
2½′	Tomato — Stokesdale ½ row	Tomato — Marglobe or Rutgers — Staked ½ row
2½′	Tomato — Pennheart ½ row	Tomato — Marglobe or Rutgers — Staked ½ row
2½′	Eggplant — ½ row	Squash — Early Prolific ½ row
2½′	Pepper — Early California Wonder	or Cucumbers
2½′	Beans — Bush Lima	
2½′	Beans — Stringless Valentine	
2½	Beans — Stringless Tendergreen	follow with cabbage plants
	Broccoli — Calabrese ½ row	Cauliflower — Erfurt ½ row
2½′	Cabbage — Golden Acre ½ row	follow with carrots Cabbage — Marion Market ½ row
1½′	Onion plants — Utah Valencia Follow with late beets	follow with late lettice follow with squash (Early Prolific)
1½′	Onion plants — Utah Valencia	follow with late lettuce
1½′ 1½′	Carrot — Chantenay Beet — Detroit	follow with snap beans
2½′	Peas — Alderman	follow with snap beans or Chinese cabbage
2½′	Peas — Hundredfold	follow with snap beans or Chinese cabbage
2½′	Peas — World's Record	follow with Buttercup or Cushaw
1′	Parsley ½ row	Swiss Chard ½ row

NOTE: This is just a suggestion for those who raise part of their food supply. Changes and substitutions are possible and sometimes necessary because of weather conditions, etc. It is to be followed in principle more than in practice.

because the top and root systems do not interfere, and radishes, which come up quickly to mark the rows, mature before they compete with carrots. When thinning carrots, beets and other similar root crops, do so when they are about three to four inches in height, leaving them only one inch apart. When the roots touch each other, pull out every other one. When they touch each other again, pull out every other one once more, so that those now left will be three inches apart or the distance to which they are usually thinned at the beginning. Following this procedure in the home garden provides for young, tasty carrots and beets over a much longer period of time, and produces about 50 percent greater yield from the same space.

Two or more varieties of vegetables may be planted at the same time so that they will mature in succession. For example, *Marcross* and *Golden Cross Bantam* corn may be planted at the same time — the *Golden Cross Bantam* being ready to harvest about the time the *Marcross* is finished. This method not only produces earlier corn but it saves the bother of planting the same variety every 10 days. *Simpson*, *New York 12* and *Great Lakes* lettuce, planted at the same time, will mature in succession, as will *Golden Acre* and *Marion Market* cabbage. These varieties, called "early" because they mature in a short number of days, may also be planted at a later date than the longer growing varieties.

In selecting vegetables give attention first to those which are highest in nutrient quality and those which produce in highest yields — such as snap beans, beets, broccoli, cabbage, carrots, swiss chard, lettuce, peppers and summer squash. Then, if there is sufficient room, grow other vegetables which do not yield as much or take up more space.

Make garden plans as early as possible. The earlier they are made, the more time there is to change them, because it is very difficult to sit down and make a plan in 10 minutes which is going to be practical. The following points should be considered when planning this garden:

Select those vegetables which the family prefers. In other words, don't plant a lot of Swiss Chard if folks won't eat it. Plan a garden so that there will be a good supply of vegetables, but not such an overabundance of one kind at one time that the family groans in protest before the last is gone. Figure the amount needed for freezing, canning or storing, and remember that only the best grown should be preserved — good meals in the winter depend on putting up foods of excellent quality in the summer.

Many gardens provide a feast early in the summer and a famine later. What could be more dismal than looking forward to the middle of August with nothing more than spinach, radishes and a few odds and ends left as reminders of bygone days of plenty! Plan, therefore, to plant another crop as soon as the first one is taken out. Do not plant the same or similar crop in the space occupied by the first. It is best not to follow beets with carrots or another similar root crop — lettuce, kale or snap beans would be a better choice because root crops following each other are likely to have deficiencies of certain elements. Also, it is best not to plant vegetables such as cabbage, broccoli, or Brussels sprouts in the same spot more than once in every fourth year. These crops may leave a residue in the soil which is toxic to related crops when planted immediately thereafter, or may be affected with diseases which carry over in the soil and attack the same kind of plants the next year.

Those crops which are to be stored should be planted as late in the season as possible so that they will be in prime condition when stored and still palatable when they are served during the later months. It is better, for example, to freeze or can the few extra carrots which were planted between the middle of April and the first of May than to try to store them over winter. Carrots for storage purposes should be planted between the middle of June and the first of July.

Try to plan the work so that it can be done in as short a time as possible. Chief plantings should be made over a period of about a month. This means that radishes, spinach and lettuce will mature before such crops as beans, corn and tomatoes — reducing the need for hoeing or weeding the entire garden at once. Most crops should be worked when the foliage

Aluminum sulfate will quickly make a rabbit change its diet.

is dry to avoid spreading disease, except when it is necessary to dust the plants early in the morning so that the dust will stick.

Control for Rabbits: One or two tablespoonfuls of aluminum sulfate dissolved in a gallon of water to which a small amount of soap flakes has been added will repel rabbits when applied to radishes, beans, beets, vine crops and any others to which the mixture will stick. A whisk broom may be used to shake it on the plant. Only one application is necessary because it puckers a rabbit's mouth so effectively that he is not in the least inclined to try a second bite. The sulfate mixture is easily washed off so that there is no danger of a person's becoming ill from eating vegetables to which it has been applied. It leaves no residue, but a rabbit prefers not to take a chance a second time even though he cannot see whether or not the plant has been treated. This does not kill rabbits — it just changes their diet.

This mixture will not stick to such plants as cabbages, cauliflower, and broccoli. A dust made by mixing one part of finely ground aluminum sulfate with 20 parts of white flour has been found effective for these and similar plants. Only one application is necessary.

★ ★ ★

From all signs, the 1945 garden crop is scheduled for a good bit of thought and planning before it actually gets under way. Even in average times, the home vegetable garden is of economic value — a value that is increased many times over with the nation at war and essential foods none too plentiful for civilian use.

TWO EASTERN STATES

"Show the Folks" Vegetable Program

EASTERN STATES will continue and expand its Demonstration Garden project in 1945 and conduct the annual Star Garden Institute at West Springfield for the 10 youthful gardeners selected throughout Exchange territory for the most outstanding project during the year.

Founded in 1943, the Demonstration Garden project was adjudged a tremendous success in that initial year. It succeeded in getting many of the northeastern farm boys and girls interested in planning, caring for and harvesting unusual and highly-productive gardens. The 1944 project was many times more successful from the standpoint of food production and interest on the part of farm youth. The demonstration gardens during the coming year will be operated under the same general rules which covered the two previous programs.

Any boy or girl aged 12 to 18 inclusive will be eligible. Likewise, the boys and girls having 4-H or FFA gardens will be permitted to enter those projects in the Eastern States Demonstration Garden program.

Eastern States is chiefly interested in the amount of food which each youthful gardener can produce for consumption by his household, not in record yields. As in past years, demonstration gardens will be organized on the unit basis and will range from the minimum unit requiring at least 500 square feet of cultivation, through the third unit type which must be at least 3000 square feet under cultivation and involves production throughout the entire growing season.

The 10 boys and girls in the nine states comprising Eastern States territory who demonstrate the greatest facility in gardening will be given all-expense trips to the Star Gardener Institute in West Springfield, Massachusetts, late in November. Read the simple Demonstration Garden rules in the following paragraphs and fill out and mail the enrollment blank today. This is one of the highlight opportunities of the year for the young people living on Eastern States farms.

VARIETIES AVAILABLE

1. **MAINE YELLOW EYE BEAN**—An outstanding, medium-sized, solid, white baking bean.
2. **GOLDEN CROSS BANTAM SWEET CORN**—A hybrid from a cross of two inbreds of Golden Bantam; exceptional quality and heavy yields; suitable for canning or freezing.
3. **GREAT LAKES LETTUCE**—The most promising variety of summer head lettuce for Eastern States territory. Awarded the all-American bronze medal award in 1943.
4. **UTAH VALENCIA ONION**—An excellent onion of the Sweet Spanish type and good for winter storage. It has a yellow skin, white flesh, is very mild and of pleasing flavor.
5. **GOLDEN CUSHAW SQUASH**—One of the best varieties of squash; highly desirable for home gardens and will store throughout the winter and early spring.
6. **WHITE MOUNTAIN WATERMELON**—A melon which will mature about 70 days after planting, and produce a fruit about six inches long and five inches in diameter and weigh from three to five pounds.

ENROLL me in the "Show the Folks" club. I enclose 10 cents for each variety checked below and agree to abide by the rules on this page.

(name)

(address)

Varieties: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

Clip, fill out and mail coupon at left today

YOUTH PROJECTS FOR 1945 • • •

THE TOTS, teen-agers, bobby sox-ers, and others under 18 years have an opportunity to get dad and mom out of the rut when it comes time to plan the vegetable garden this year. Just for the juniors, Eastern States has arranged a special "Show the Folks" vegetable club, designed to give the family a taste of some of the nutrient-packed, delicious, recent developments in horticulture. This plan offers six different, widely-varied items each farm family should add to its yearly list.

The young gardeners who "Show the Folks" and do the best job of it will have an opportunity to earn one or more of six $25 War Bonds Eastern States is making available for this group. This club is planned for the younger set to acquaint them with new crops which are a bit off the beaten track and sure to give the whole family a taste thrill. Each variety offered is outstanding in production, taste and nutritional value.

This "Show the Folks" club is simple to join, requires little work and it should be easy for any young vegetable grower to do an outstanding job. Any youngster is eligible to win in any one variety class, or in more than one class. There are no restrictions. To join this interesting vegetable club, a boy or girl merely fills out the blank on this page and orders the vegetable seeds he or she desires to grow. The seeds are 10 cents a packet.

The club member should keep some record or notes throughout the season, in order to have accurate observations for use in preparing the letter required in the award of the War Bond.

• • •

RULES AT A GLANCE
"Show the Folks" Club

1. All club members must be under 18 years of age.

2. Members may plant and cultivate any single variety, more than one variety or all varieties.

3. All boys and girls entering the club program must agree to write a letter to Eastern States Farmers' Exchange after the crop or crops have been harvested, telling their reaction to the variety, its yield and the comments of those in their household on the value of the variety as food.

4. A $25 War Bond will be offered for the best letter on each variety.

5. A club member may be eligible for one or more bond awards, but must write a separate letter for each variety planted and cultivated.

6. All letters will be judged by the Eastern States Farmers' Exchange for their informative content and not on the basis of literary value.

DEMONSTRATION GARDEN RULES READ THE SIMPLE RULES AND MAIL THE ENROLLMENT FORM NOW

The Rules

1. Demonstration gardens may be in three units, any of which may be a project, or three units may be considered together as a complete garden. The first unit requires at least 500 square feet for early vegetables. The second unit comprises at least 1500 feet and includes mid-summer vegetables. The third unit may not be less than 3000 square feet and involves production throughout the entire season including vining vegetables.

2. The candidate "enlists" by completing the enrollment pledge on this page and mailing to EASTERN STATES COOPERATOR, West Springfield, Massachusetts. Candidates must be 12 to 18 years of age, inclusive.

3. All supplies of seeds, fertilizer, sprays and dusts used are to be Eastern States, insofar as is possible.

4. The enlistee receives a plan, calendar, guide, record book and diary to be kept in full detail while the garden is being planted, cared for, used or harvested for storage. This is the all-important feature of the *Demonstration Garden* project.

5. The completed record forms are to be mailed to the EASTERN STATES COOPERATOR and the information they contain is to be used in analyzing and reporting the results of the demonstrations.

6. *Demonstration Gardens* are subject to inspection during the growing season by Eastern States employees.

7. Gardens will be judged upon the basis of what the family was supplied from the garden, what the field inspector reported and how the records of the project were kept.

8. The 10 foremost gardeners will be chosen for all-expense trips to West Springfield for a visit to Eastern States facilities, and an award dinner filled with plenty of fun and inspiration.

MAIL THIS TODAY

INFORMATION SERVICE
Eastern States Farmers' Exchange
West Springfield, Mass.

Enroll me in the Eastern States Demonstration Garden project. I agree to comply with the rules of the project appearing on this page.

Name.....

Address.....

.....

Date of birth.....

Indicate if member of 4-H, FFA, or other group.....
Check size of garden:
#1, 500 sq. ft. ☐; #2, 1500 sq. ft. ☐; #3, 3000 sq. ft. ☐

☆ **ONCE AGAIN** Eastern States Farmers' Exchange has been named among the 50 leaders in the United States in the effective use of direct-by-mail information and advertising material. This award was announced recently by the Direct Mail Advertising Association. The 50 leaders were picked from probably more than 1000 entries, which included most of the country's great, well-known corporations. This is the fourth consecutive year Eastern States has been so honored.

This year your farm cooperative entered only the EASTERN STATES COOPERATOR. Competition was especially keen since entries were judged on an "aid to the war effort" basis, an approach on which many corporations have spent millions of dollars and employed the highest-priced talent.

☆ **FOR WORM CONTROL** in sheep and cecal worms in turkeys, Eastern States now distributes *Phenothiazine*. It is available as a powder for mixing with salt and feed and in liquid form for drenching sheep. It is used for removing round worms, hook worms and nodular worms in sheep and cecal worms in turkeys. Described by USDA as the nearest approach to an ideal worm remover. *Phenothiazine* is available in several sizes to accommodate members with varying needs. Each container carries complete directions.

☆ **ENTIRELY NEW** are *Eastern States Calf Tablets* now available in bottles of 20 and 100.

They are beneficial in preventing and treating nutritional scours, colds, pneumonia and navel ill in very young calves. Will also give weak calves a better start. One tablet each day to every calf for at least the first 10 days after birth. Continue 10 more days for the weaker calves.

These tablets contain vitamins A, C, and D and niacin. They are feed — not a medicine. They can be crushed and fed in milk, snapped into calf's throat or placed on back of tongue. Be sure they are swallowed.

Calf Tablets result from experiments conducted at University of Wisconsin and confirmed at Eastern States Westbrook Laboratory.

☆ **TAKE DELIVERY** whenever you can get it of *Ammonium Nitrate*, *Nitrate of Soda* or *Uramon*. These nitrogen materials are allocated and supplies are short — with demand greater than supply. Keep your representative or warehouse informed of your need — and your willingness to take delivery whenever available.

☆ **FAMILY HEALTH** will be better when backed up by a good vegetable garden. A heavily-fertilized, well-tended garden will pay fine dividends in economical food, good appetites and real table pleasure. Feed the garden well and it will feed you well. Good gardens can be worth $1000 an acre and more.

☆ **PLEASE ASSIST** your local representative in making up a carload order of *Eastern States Fertilizer* for shipment in January or February. Members who truck from plants are also urged to take their fertilizer early — in January, if possible. That may seem like rushing the season but with present manpower and transportation problems it is absolutely necessary for the fertilizer plants to stretch their shipping season over more weeks this year. Not only are you *sure* of your fertilizer by accepting delivery earlier than usual, but Eastern States also offers you a financial advantage to do so. See your representative or warehouse for details.

☆ **IN AREAS** where anthracnose is prevalent, members should obtain seed of Cumberland Medium Red Clover and of other desired legumes and grasses and make their own mixtures.

In Eastern States Hay-Pasture seed mixtures numbers 1, 2, 3, 4 and 5, the Medium Red Clover seed contained is of the Eastern States Regular Strain.

By far the greatest part of the volume of these mixtures is used by members in New England where winter hardiness is more important than resistance to anthracnose. Therefore, the Cumberland anthracnose-resistant strain of red clover has never been used in those mixtures.

☆ **TWO CARLOADS** containing between 70,000 to 80,000 pounds of Hungarian Millet seed for planting in 1945 have been received at the Eastern States seed house in Buffalo.

☆ **INTENDED FOR** forage production only, *Eastern States Selected Oats* for 1945 will come from western Canada — and probably be of Victory or Vanguard varieties. They will be plump, heavy kernels, weighing 42–46 pounds to the measured bushel. Members can not expect similar grain production from this seed here in the northeast.

☆ **WAITING** for you is some part of the 10,000,000 pounds of field seeds which Eastern States had available for 1945 planting before orders began coming in. Superior seed is the foundation for success on most northeastern farms.

☆ **HAVING SERVED** its "stretch" in wartime service, *Stock Feed* has been discontinued from the Eastern States list. Feed ingredients now permit present members to obtain their full requirements of specialized rations formulated to meet particular needs.

☆ **CLOSE** attention to directions will pay well in using *Eastern States Breeder Concentrate Pellets*. Many flocks are now being shifted from a market egg to a breeder basis. *Concentrate Pellets* permit all-year use of *Eastern States Egg Mash*.

☆ **ON CARS** shipped after January 30, *Eastern States Turkey-Starter* will again be available.

Sunday — We figure that one good thing for the family to do on the last Sunday of the old year is to bundle up in warm clothes and galoshes and take a walk together all over the farm. Did you ever think how few times in quite a span of years all of you see and talk about conditions and plans place by place around your farm? Molly started this little project years ago. She said if I didn't watch out my wife's idea of the farm would become a set of "grumble spots" muttered about just before bedtime, but never seen nor understood by the audience. It will amaze you, too, how much the kids enjoy this trek.

Monday — Somewhere I read that Iowa farmers spend six to 15 minutes in producing a bushel of corn. At two cents a pound for shelled corn the six minute farmers made their corn time worth a gross of $11.20 an hour; at three cents a pound, $16.80. But the ag engineers at the state experiment station worked up and demonstrated a way to cut the time to 2.7 minutes. That figures better than $33 an hour. Sounds awfully good. It shows a glimpse of a way more of us ought to figure some of the things we do on the farm. But I suppose if farmers left such figures lying around some dope will figure $33 times 40 hours is $1320 a week straight time and for 20 hours more at time-and-a-half it runs the pay up to $2310 a week!!!

But, of course, you have to deduct the cost of running the farm from these wages *and that makes some difference!*

Tuesday — Those of us who have hammered away on a productive roughage program can gloat a bit this winter. Not far from here a dairyman sold out and the 50 tons of reasonably good timothy-and-alfalfa hay in his barn sold at auction for $51 a ton! At that rate the Eastern States fertilizer and seed used on our hay and pasture plots has made us some terrific savings!

Wednesday — Our fall brood of broilers sold at a small profit over direct costs. Whoever figured OPA ceilings must have turned a deaf ear to the differences in present and past relations of feed prices and poultry meat prices. The only part of this broiler flock that will really give us much satisfaction will be the birds we put in our freezer for our own eating.

Thursday — How hope springs eternally in the human breast is never better shown than in George, our poultryman neighbor. This has been a so-so year for his market egg business, but he's bragging already about the brood of sexed pullets that have followed his not very profitable broilers.

Friday — I've written before about The Shadow — the elusive black cat that de-ratted Henry's turkey farm. Well, Henry hadn't seen The Shadow for many weeks and the other day he saw a rat run under a brooder house. Henry was quite upset. Last night he called up, so happy he just had to tell somebody. He'd seen The Shadow again — and right there at the hole under the brooder house!

Saturday — I'm satisfied that one of the least appreciated and biggest values in the whole list of supplies we buy cooperatively is *Eastern States Dairy Cleanser*. I say least appreciated because few farmers have given it patient attention enough to observe its merit in comparison with competing items. Downtown today I looked over a shelf full of these products. For the 85 cents a 10-pound package of *Eastern States Dairy Cleanser* costs, you could buy anywhere from an eighth to a third as much of these other more dilute cleansers!

☆ **GEAR LUBE** dispensers are now available through Eastern States. One is a large pump type holding 25 pounds with hose and a goose neck pipe; the other, a 12-ounce hand suction gun with a flexible pipe suitable for either removing old gear lube or introducing the new in smaller amounts. Get further details from your representative or warehouse.

EASTERN STATES *Used* BAGS

Eastern States Feed Bags are now leased directly to members at 15.5 cents each. Thus the bags are constantly the property of the Eastern States Farmers' Exchange. Bags no longer serviceable in transporting Eastern States feed will be released to the commercial bag market and members will receive the market price.

Your local representative or regional warehouse will accept your bags and return them to a bag house authorized to grade and recondition Eastern States bags. You may return as few as 10 in one bundle.

Tag the bundle plainly with the name of your representative (or warehouse) on the front of the tag; put your name on the back, together with the number of bags in the bundle. Get shipping tags from your representative or warehouse.

These are the only authorized Eastern States bag houses:

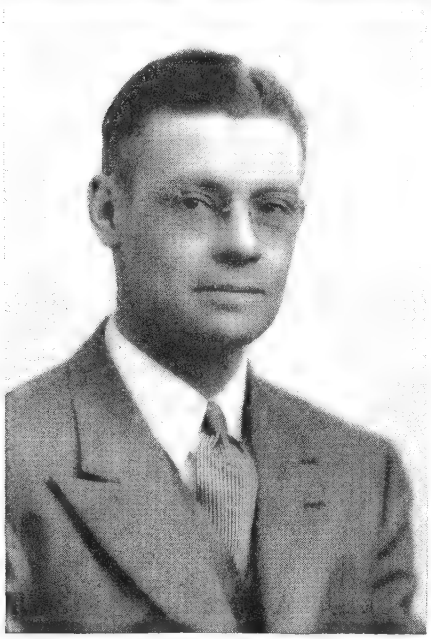
GENERAL BAG & BURLAP COMPANY
1617–25 North Second St.
Philadelphia, Penn.

CARL BURWICK & COMPANY
81 Thomas St.
Worcester, Mass.

CARL BURWICK & COMPANY
314–324 Grote St.
Buffalo, N. Y.

A. BRODER BAG COMPANY
28–52 Wasson St.
Buffalo 10, N. Y.

IF IT'S INTERESTING TO Members



Eli Wiggins

☆ **TWO NEW FACES** appeared in the West Springfield headquarter's staff during December.

Eli Wiggins joined Information Service to devote his time principally to preparation of material for the Field Service manual and to promote its more aggressive use by fieldmen, warehouse workers and local representatives. Mr. Wiggins has been a fieldman in western Pennsylvania. Previous to this he was, for several years, supervisor of vocational agriculture in Lawrence, Beaver and Butler counties, Pennsylvania. He is a graduate of Bethany College, West Virginia, and also did graduate work in agriculture at Pennsylvania State College.

J. D. Donnis has taken over duties as an assistant in the Farm Supply Services at West Springfield. Joe started his work as a local representative, later served as a warehouse manager and became a fieldman in western Massachusetts in July, 1940. He attended Massachusetts State College.

☆ **INTO THE MOVIES** went Eastern States Member C. B. Musser and family and their farm of York, Pennsylvania, when USDA recently produced a film to highlight outstanding food production. As a sequel, *The Gazette and Daily* newspaper of York carried a full page of pictures and story on the Musser family operations. It is understood that prints of the motion picture have been shown in Russia and China. The Mussers are just about 100 percent Eastern States in their cooperative purchase of farm supplies.

J. D. Donnis

☆ **BEST KNOWN METHOD** of seeding smooth bromegrass is to mix 10 pounds of seed with 50 or more pounds of oats per acre and distribute the mixture with a standard grain drill. Care must be taken to have the oats and the bromegrass covered with soil but not too deeply. Usually adjusting the drill hoes or discs to run as lightly as possible and still have the seed covered is best. Also planting both the oats and the bromegrass as early in the spring as the ground is in good tilth is important.

Good stands of bromegrass have been obtained from fall seedings but conditions are less likely to be favorable for a quick start, and sufficient growth may not be made to successfully withstand that first winter. Also there may be no good use at that time of year for oats or some other small grain, the seed of which is needed to carry the light bromegrass seed through the drill.

Superphosphate may be used as a carrier in sowing bromegrass seed but requires more work in mixing than does oats.

Some lots of bromegrass can be seeded satisfactorily with a cyclone seeder when the seed in the hopper is kept constantly stirred, but other lots are so light and winged that this procedure is indeed difficult and uneven distribution may result.

So to make your first seeding of bromegrass easy and successful, drill the seed in combination with oats early in the spring.

A DRY PERIOD of six to eight weeks with five to 10 dollars' worth of *Eastern States Fitting Ration* and *Eastern States Calving Ration* may increase the amount of milk produced by a good cow from 1000 to 3000 pounds. *Calving Ration* is laxative, cooling and helps prevent inflammation of the udder, supplies an abundance of easily assimilated calcium, quickly available sugar and increased quantities of vitamin A. When a cow calves with ease and has little or no congestion of the udder, you can get her back on full feed quickly, which helps keep the incidence of acetonemia to a minimum.

☆ **TWO YEARS OF HAY** in a four-year rotation is better than one, according to results of trials of the past seven years by the Ohio Agricultural Experiment Station at Wooster, Ohio. The following chart gives the production from three typical rotations:

Rotation	PRODUCTION OF * *DP*	** *TDN*
Corn, oats, wheat and clover	270	2480
Corn, soybeans for grain, wheat and clover	360	2560
Corn, wheat, 2 years of alfalfa-clover-timothy meadow	370	3080

* Digestible Protein
** Total Digestible Nutrients

The soybeans were harvested with a combine and the haulm disked down for the wheat crop.

The third rotation removed less nitrogen from the soil but more phosphorus and potash than the other two. With such a rotation, mineral fertilization needs to be heavier to replace these heavier removals.

VEGETABLE SEED ORDER

to

EASTERN STATES FARMERS' EXCHANGE

WEST SPRINGFIELD, MASSACHUSETTS

V _____

SEND PAYMENT WITH ORDER TO AVOID C.O.D. CHARGES

Date of Order _____

Name _____ (PLEASE PRINT)

RFD or Street _____

Post-Office _____ State _____

Express or Freight Office _____ State _____

Note: On "Add-to-Draft" orders only! Representative sign below if he approves "Add-to-Draft" terms:

Representative's Signature _____

Order only varieties and sizes as listed in catalogue.

THIS FORM MUST BE RETURNED WITH YOUR LETTER IF YOU WRITE ABOUT THIS ORDER.

This order form will be returned to you when your order is shipped. If you have occasion to write about this order, you must return this form with your letter.

This order is given and accepted in accordance with conditions printed on the back hereof.

Column 1					Column 2				
Quantity	Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value	Quantity	Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value
	ASPARAGUS SEED				Brought forward from Column 1				
	BEAN					CARROT			
						CELERY			
						CHARD			
						CORN - SWEET			
	BEET								
	BROCCOLI								
	CABBAGE								
						CUCUMBER			
	CAULIFLOWER								
	Total of Column 1					Total of Columns 1 and 2			

Form 1329

Additional items on the other side

Quantity	Column 3 Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value
Brought forward from Column 2				
	EGGPLANT			
	ENDIVE			
	KALE			
	LETTUCE			
	MUSKMELON			
	WATERMELON			
	ONION			
	PARSLEY			
	PARSNIP			
	PEA			
Total of Columns 1, 2 and 3				

Quantity	Column 4 Indicate Variety Desired When More than One is listed in the Catalogue	√	Unit Price	Value
Brought forward from Column 3				
	PEPPER			
	PUMPKIN			
	RADISH			
	RUTABAGA			
	SPINACH			
	SQUASH			
	TOMATO			
	TURNIP			
Total of entire order				

CONDITIONS.

This order is subject to acceptance by the West Springfield office of the Eastern States Farmers' Exchange and after such acceptance is further subject to cancellation or prorationing by the Exchange in event of seed crop failures, strikes, fires, embargoes or other contingencies beyond the control of the Exchange. It is further subject to change by the buyer in event of necessary change in his cropping plans upon presentation of satisfactory explanation in writing to the Exchange office in West Springfield and if desired kinds are available.

The member agrees that shipment will be made and accepted under the following condition:

The Eastern States Farmers' Exchange has exercised all reasonable care and precautions in the production, preparation and distribution of this seed, but cannot be responsible for the operation of Nature's laws, nor control the conditions under which it is later stored, handled, planted or grown; so therefore gives no warranty express or implied concerning the description, quality, productiveness or condition of the resulting crop and shall in no case be liable for an amount greater than the amount actually paid for the seed. Statements of germination, description and other information are given as a report of our tests, observations and advice.

Orders cannot be accepted or filled on any other terms.

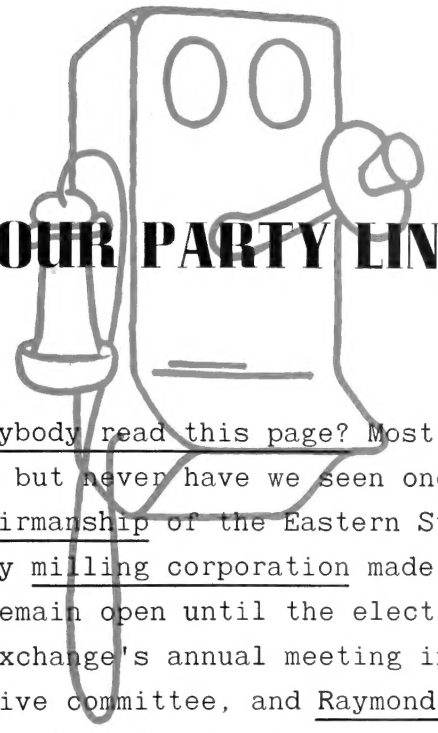
Send payment with order and avoid C.O.D. Charges

ASSEMBLED BY_____

CHECKED BY_____

DATE SHIPPED_____

THIS ORIGINAL ORDER WILL BE RETURNED TO YOU.



Listen!

ON OUR PARTY LINE

Does anybody read this page? Most everything else in the COOPERATOR has had a fan letter -- but never have we seen one for this page.

The chairmanship of the Eastern States executive committee and presidency of the subsidiary milling corporation made vacant by the death of Roy D. Hunter in November will remain open until the elections regularly held for these offices at the time of the Exchange's annual meeting in February. C. Marsden Bacon, vice chairman of the executive committee, and Raymond S. Taylor, vice president of the milling unit, will officiate during the interim.

Feed ingredient shortages are now easing and the outlook is better. This should reduce the emergency nature and frequency of formula changes. Already back is good old Eastern States Fulpail, 20 percent protein. Manufactured feeds are about 95 percent of Eastern States total feed volume -- two-thirds of these for poultry, one-third dairy and livestock.

As this is written Eastern States has handled 106 carloads of hay for members so far this season.

Eastern States fertilizer plants will have shipped half of their output to be used for 1945 crops by the first of March. Fall and winter deliveries help members tremendously in operating their fertilizer plants efficiently.

NOW is the time to overhaul equipment. No better way for a farmer to spend his time in winter than to tune up, clean up, repair and order replacement parts! Bear in mind that the nation's farm equipment has been put through terrific paces producing the amazing 1944 farm crops -- and short-handed at that -- and you'll understand why more concern than ever should now be given to equipment upkeep. Replacements and parts are scant compared to needs. Think of this long before you want the machinery in the fields.

Flash -- that world's record for Guernseys in class DDD predicted in the August COOPERATOR has come through. Biscoe Heartsease Betty produced 14,965.2 pounds of milk and 752.7 of butterfat and carried a calf 231 days. She is Eastern States fed and bred and tested at Biscoe Farm, Middlebury, Connecticut.

Good way to start the New Year -- order your Eastern States vegetable seeds early for a garden that will treat the family to good eatin' for months to come!

EASTERN STATES FARMERS' EXCHANGE

Return postage guaranteed by
EASTERN STATES FARMERS' EXCHANGE
West Springfield, Mass.

U. S. POSTAGE
PAID
Sec. 562 P.L. & R.
Concord, N. H.
Permit No. 45

PROTECT

Your Fruit and Vegetables BETTER in 1945

WISE MANAGEMENT includes timely and thorough spraying or dusting of fruit and vegetable crops. This is true with the home garden as well as commercial production.

Through base stocks at both fertilizer plants and current supplies kept at its 60 warehouses, Eastern States is able to give prompt and complete service to home gardeners and commercial producers alike. There will be an Eastern States spray or dust material ready to do the job for you — dependably and economically.

Consider these advantages when evaluating Eastern States as a source of spray and dust materials:

(1) The program of materials is complete for all classes of producers, vegetable growers, orchardists and potato men.

(2) Eastern States works closely with state and federal agencies who carry on research work to improve insect and disease control — and passes on to you, in usable form, benefits from their studies and findings.

(3) Eastern States is able to keep a close finger on quality control through cooperation of your own fine laboratory and trained chemists at Buffalo.

Cooperative Farm Supply Services
EASTERN STATES FARMERS' EXCHANGE